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January 1, 1986 to March 31, 1987

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Ministry of Agriculture and Fisheries
Hon. John L. Savage, Minister

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To the Honourable
Robert Gordon Rogers
Lieutenant-Governor of the
Province of British Columbia

MAY IT PLEASE YOUR HONOUR

I have the honour to submit for your consideration the Annual Report of the Ministry of Agriculture and Fisheries for the 15-month period January 1, 1986 to March 31, 1987.

John L. Savage

John L. Savage
Minister of Agriculture and Fisheries

Ministry of
Agriculture and Fisheries

AGRICULTURAL REGIONS

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REPORT OF THE DEPUTY MINISTER

To the Honourable John L. Savage
Minister of Agriculture and Fisheries

Sir:

I am pleased to present the annual report of the British Columbia Ministry of Agriculture and Fisheries. This report summarizes the activities of your staff for the 15 months from January 1, 1986 to March 31, 1987.

Ministry annual reports have in past been prepared on a calendar year basis, however, subsequent reports will in future be prepared based on the government fiscal year beginning April 1st and ending March 31st.

The agriculture, fisheries and food sector performed strongly in 1986, with total agricultural cash receipts of more than $1.0 billion.

Manufactured shipments and retail sales of food and beverage products increased significantly. The increase was due in large part to a lower dollar value compared to U.S. currency, which aided exports. The large number of visitors attracted to the province during Expo '86 also contributed to a stronger provincial economy.

Despite a relatively good year, British Columbia agriculture faces numerous pressures in the light of changing world economic conditions and actions of other countries. Over-production of grain and abnormally heavy support of grain prices in the European Economic Community and the United States have lowered world grain prices significantly, which has had a severe impact on the price of Canadian grain. This had a substantial detrimental effect on the province's grain producers and others involved in the grain sector.

On the other hand, the agriculture, fisheries and food industry in British Columbia is uniquely equipped to take advantage of a number of opportunities, particularly in exports of food products and technology as well as in replacement of imports. There are major opportunities as well in the rapidly-growing aquaculture sector. Ministry executive and staff worked closely with the industry during 1986 to help producers of primary and processed food products meet these changing demands of the marketplace. During the year, ministry programs were being redesigned with a stronger emphasis on market orientation and overall farm business management.

As the premier marketing activity during 1986, FOOD PACIFIC '86 was hosted by the provincial government in co-operation with the federal government and other agencies. It was the first international food exhibition of its kind in Canada.

Also during 1986, the Province hosted the annual meeting of Canadian agriculture ministers, during which a national agricultural strategy was formulated as a means of providing improved federal-provincial and interprovincial co-operation in the nation's agricultural development.

British Columbia's agriculture, fisheries and food sector is a vital contributor to the provincial economy and the well-being of all British Columbians. The executive and staff of the Ministry of Agriculture and Fisheries look forward to assisting the industry in meeting the challenges and opportunities of the coming months.

Respectfully submitted,

G.A. MacEachern, Ph.D.
Deputy Minister

INDUSTRY PERFORMANCE AND PROGRAM HIGHLIGHTS - 1986-87

- Ministry of Agriculture and Fisheries programs focused more strongly on industry market orientation and farm business management.

- The agriculture, fisheries and food sector performance was generally strong; farm cash receipts stabilized at over $1.0 billion, while total net farm income set a record of $248.5 million.

- Crop receipts to B.C. farmers dropped by 3.6 percent, due mainly to very low grain prices, while total livestock receipts increased approximately 2.3 percent over the previous year.

- Farm operating costs declined for the second straight year, due mainly to lower interest rates, reduced fuel and fertilizer prices, and lower livestock feed costs due to low grain prices.

- Commercial fish and aquaculture production and value increased substantially due to larger catches and a strengthening aquaculture industry in the province.

- B.C. food and beverage manufactured shipments rose a substantial 14.7 percent to approximately $3.27 billion.

- Total B.C. food and beverage expenditures at the retail level were estimated at $8.1 billion, an increase of six percent from the previous year.

- With the emphasis on market development, British Columbia's agriculture, fisheries and food industry hosted Canada's first international food and beverage trade show, FOOD PACIFIC '86, which resulted in millions of dollars in actual sales and potential sales for British Columbia and Canadian food firms.

- Agriculture ministers signed the "National Agriculture Strategy" in December 1986. The strategy outlined mechanisms for interprovincial and federal-provincial co-operation in developing Canadian agriculture. It specifically dealt with special grains programs to help income distressed grain producers, as well as national programs including supply management, farm finance, tripartite stabilization, grain stabilization, feed freight assistance, research and technology transfer, soil and water conservation, and crop insurance.

- Drought conditions the previous year and during 1986 dramatically reduced livestock feed supplies. The provincial government introduced a number of programs to encourage livestock producers to retain breeding cattle and sheep rather than sell them, to help purchase feed including straw to feed cattle in areas of low feed production because of drought, and to help B.C. feedlot operators compete with high prices offered by prairie feedlot operators who had the benefit of government assistance in their own provinces.

- A greenhouse assistance program was offered to the greenhouse industry to encourage improvements in labour and energy efficiency.

- Extension and education continued to be the mainstay of the ministry in transferring technology and knowledge to food producers and processors. Numerous seminars, field days, demonstrations, as well as direct contact with clients, were conducted to improve production and business management skills and techniques.

- With program emphasis on marketing and farm business management, a number of farm-management computer decision models were developed for several commodities including beef, tree fruits, seapen salmon production, among others.

B.C. MINISTRY OF AGRICULTURE AND FISHERIES MANDATE

The ministry's mission is:

to enhance the supply of agriculture, fisheries, and food products for British Columbia, and other market opportunities, on a sound commercial basis.

The B.C. Ministry of Agriculture and Fisheries provides programs to help industry achieve its goals, thereby enhancing its contribution to the B.C. economy.

In 1986 the ministry continued to alter its programs to meet the changing needs of the industry. All ministry programs are being redirected to the strong market orientation needed to help farm and food businesses produce the exact products demanded by consumers.

Marketing programs are being designed to help the industry introduce B.C. products to the world and familiarize B.C. with market opportunities. They also help businesses access the food service market with specialty and further processed products.

Extension programs are being redirected to emphasize overall farm business management and marketing.

Financial assistance and incentive programs, such as the province's New Technology Capital Assistance Program and the federal-provincial Agricultural and Regional Development Subsidiary Agreement (ARDSA) add financial stability to the industry and help it adopt technology which will make it more competitive.

PROGRAMS

Ministry programs are administered through four major areas of activity:

1. *Extension and Education:* to accelerate adoption of new technology, information and management skills in the industry;

2. *Trade and Marketing:* to help the industry take advantage of new opportunities both at home and abroad;

3. *Financial Assistance and Incentives:* to deliver programs designed to encourage investment and development as well as reduce risk and the impact on incomes of uncontrollable factors such as weather and fluctuations in prices and costs;

4. *Resource Sustainability:* to help the industry maintain or improve B.C.'s soil and water resources.

A fifth area, *Central Support Services*, which includes policy development and economics, has an impact on all others by providing an overall framework for program development and delivery. This includes ensuring that programs are designed to encourage growth and development and that they provide farmers with the tools to make sound business management decisions.

The majority of ministry programs are delivered through Field Operations and Financial Assistance programs. Front line staff work directly with farmers and agri-business in four agricultural regions -- Central-Peace River, Thompson-Cariboo, Okanagan-Kootenay and South Coastal. They provide advisory and demonstration services with support from seven ministry specialist branches: Crop Protection, Field and Special Crops, Soils, Animal Industry, Veterinary, Engineering, and Rural Organizations and Services.

Other services include animal health and disease control, food quality inspection, and soil, feed, and tissue testing. Animal health and disease control in British Columbia are the responsibility of the Veterinary Diagnostic Laboratory in Abbotsford. The Dairy and Food Laboratory provides food quality and inspection services, contributing to overall food safety for consumers. Soil, feed and tissue testing services are provided at the Kelowna laboratory.

The ministry's actual expenditure for 1986-87 was $70,782,267. A breakdown of expenditures is provided in Table One and Figure One. For more information about ministry organization, refer to the organization chart at the end of this report.

Table One

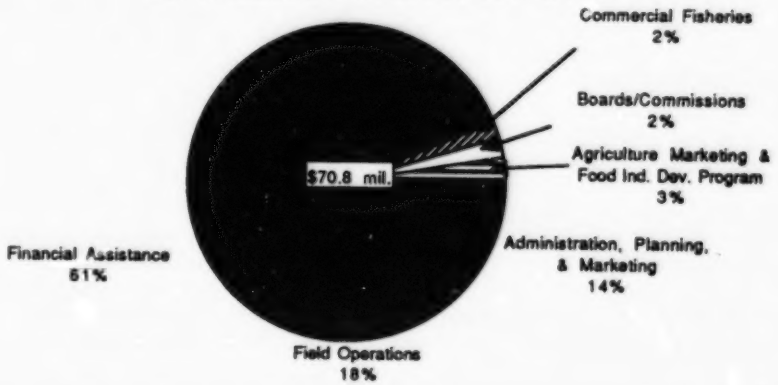
MINISTRY EXPENDITURES

	1985-86	1986-87
Minister's Office	$179,524	$187,124
Ministry Operations:		
Administration, Planning and Marketing	7,412,724	10,070,814
Agriculture Marketing & Food Industry Dev.(1)	1,807,955	1,833,569
Field Operations	14,599,854	13,000,268
Financial Assistance Programs	39,720,937	31,371,325
Sub-total	**63,541,470**	**56,325,976**
Milk Board	289,731	331,443
Provincial Agricultural Land Commission	1,023,665	1,031,196
Agriculture-Food Regional Development SubsidiaryAgreement (ERDA)	0	1,742,554
Commercial Fisheries	0	1,135,403
Cattle Horn Act	96,727	28,571
Crop Drought Assistance (special warrant)	2,450,000	0
Red Wine Assistance (special warrant)	2,724,600	0
Livestock Drought Assistance (special warrant)	2,250,000	0
Bill 16 - Crop Insurance	0	10,000,000
Total	**$72,555,717**	**$70,782,267**

Notes: (1) Agriculture Marketing and Food Industry Development was reorganized into Ministry Operations in 1986-87 therefore 1985-86 has also been changed for presentation purposes.

Figure One

MINISTRY EXPENDITURES 1986/87



ECONOMIC PERFORMANCE OF THE AGRICULTURE, FISHERIES AND FOOD INDUSTRY IN 1986

GENERAL ECONOMIC FACTORS AFFECTING AGRICULTURE, FISHERIES AND FOOD PERFORMANCE

In 1986 the British Columbia economy experienced relatively strong growth for the second year in a row. Real gross domestic product increased by three percent due mainly to a 5.5 percent increase in consumer spending. Key factors behind the increase in personal expenditures were a rise in real incomes and employment, and Expo '86, which resulted in a large and sustained influx of visitors to the province. Real personal incomes increased 1.5 percent and visitor volume increased 21 percent. Employment grew by 3.7 percent, the best performance in five years, and the unemployment rate decreased to 12.6 percent from 14.2 percent in 1985. Housing starts rose 15.1 percent and the value of manufacturing shipments increased 7.7 percent.

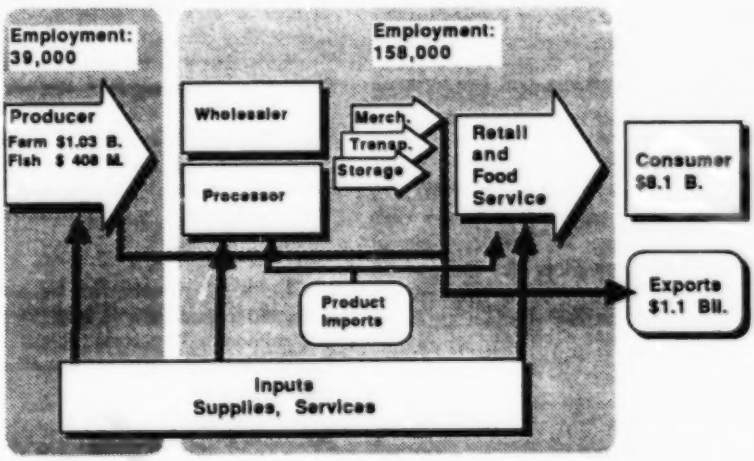
AGRICULTURE, FISHERIES AND FOOD SECTOR PERFORMANCE

Agriculture, fisheries and food sector performance in 1986 exceeded that of 1985. Total agricultural cash receipts were again greater than $1.0 billion, rising fractionally above the record high of $1.025 billion in 1985. Increases in sales of livestock, fish and high value specialty crops more than offset reductions in grain, oilseed and fruit crops. Farm expenses declined for the second consecutive year. The 1.4 percent decline was due to lower interest rates, energy prices and feed costs as well as reduced input use in some crop sectors.

Realized net farm income rose to $243.1 million, up five percent from the year before, and total farm net income (after valuation of inventories) set a record of $248.5 million. Direct government payments to

Figure Two

BRITISH COLUMBIA AGRI-FOOD SYSTEM - 1986



producers were up 14.7 percent as a result of softer prices for a few commodities (particularly grain) and the economic squeeze on farmers as asset values declined. Total farm debt declined from $1.43 billion to $1.34 billion, reflecting in part a disappearance of some debt due to farm bankruptcies, greater profitability in the livestock sector and a concerted effort by the federal and provincial governments to assist distressed farmers.

The total ocean fish catch rose in tonnage and value, and the value of production in the aquaculture sector grew an impressive 31 percent. The value of the aquaculture harvest increased from $4.1 million in 1985 to $6.0 million in 1986.

With exports aided by a lower dollar and domestic spending boosted by increased employment, real incomes and the influx of tourists due to Expo '86, manufactured shipments and retail sales of food and beverage products increased significantly.

Farm Cash Receipts

Crop Sector

Receipts from crops to B.C. farmers dropped 3.6 percent in 1986. This largely reflected a sharp decline in market receipts from grains and oilseeds due to lower production, lower marketings and severely depressed prices. Receipts from fruit crops were down by 2.4 percent. The receipts of tree fruit farmers dropped 1.2 percent in spite of higher prices due to a reduced crop. Berry and grape farmers experienced a 3.5 percent drop in receipts. There was a small increase in vegetable receipts reflecting increased volume which offset a drop in the total harvested acreage of field vegetables.

Floriculture and nursery receipts continued to show solid growth, rising eight percent over 1985 receipts, reaching a new high of $65.1 million. Sales of forest products from farm woodlots rose 10.3 percent to their highest ever level of $14.9 million, an indication of the rising saleability of wood for home heating.

Livestock Sector

Total livestock receipts were up about 2.3 percent over 1985. Dairy receipts were down slightly despite higher sales of both fluid and industrial milk as a result of an appreciable drop in the net producer price of fluid milk. Cattle and calf receipts were up by three percent as cattle prices rose strongly in the last two quarters and fed cattle marketings increased with lower feed grain prices. Lighter hog marketings but higher average prices led to a 16.3 percent increase in hog receipts. Sheep, lamb, and wool receipts were down 6.3 percent due to a drop in sheep marketings which more than offset an increase in lamb marketings.

Receipts from poultry sales expanded significantly for the third consecutive year due to the continuing growth in the per capita demand for chicken and turkey meat. Egg receipts remained relatively stable as a price drop offset a small increase in production.

Receipts from honey production dropped 18.3 percent as production declined due to drought while fur product receipts dropped sharply due to a significant fall in pelt production.

Fish Sector

The ocean fish harvest in 1986 totalled 224,000 tonnes, an increase of seven percent over 1985. Landed value rose to $382 million, up from $378 million in 1985.

The values of all major fish species, with the exception of herring, were up significantly above their average values over the past five years. The salmon catch, which is almost half the fish catch, was 37 percent larger, while halibut landings were 11 percent larger. The groundfish catch was 46 percent larger, primarily due to a significant increase in the offshore hake fishery resulting from co-operative arrangements with foreign countries. Shellfish landings remained stable. Herring landings, in contrast, fell 50 percent in continuation of a declining trend evident since 1983 which is generally attributed to oceanographic conditions caused by a northward shift of the El Nino current.

The total production of aquaculture farms increased dramatically in 1986. Producer sales totalled $6.0 million, a 31 percent increase over 1985. Oysters represented 42 percent, salmon 48 percent and trout 10 percent of value.

Farm Operating Expenses

Farm operating expenses declined for the second consecutive year. Contributing significantly to the

decline of 1.4 percent was a 5.9 percent reduction in interest expenses due to continued low interest rates and a somewhat smaller volume of farm debt. Feed expenses dropped 7.9 percent due to low grain prices while fuel, fertilizer and pesticide expenses fell due to lower oil prices and reduced use as the planted and harvested area declined. Feeder cattle purchase expenses were up by 11 percent due to sharply higher prices, wages were up by 4.4 percent, rent up by 3.4 percent and taxes up by two percent.

Farmland, Numbers of Farms and Employment

The 1986 Census showed 900,302 hectares of improved land or about 40,500 hectares less than the amount of improved agricultural land in 1981. The decline occurred mainly in improved pasture while the area of land under crops remained stable.

The 1986 Census also reported 19,063 farms, a loss of 949 farms since the Census taken in 1981, which reported 20,012 farms. The decrease in farms occurred mostly in small hobby/subsistence farms with annual sales under $10,000. The largest farms in the province (with annual sales in excess of $250,000) showed a significant increase in numbers.

Employment in agriculture dropped in 1986 to 31,000, down from 36,000 in 1985; the decrease occurred mainly in paid labour, a reflection of the financial pressure on farmers due to depressed crop prices and declining asset values.

Fishing Vessels, Fish Farm Numbers and Employment

The ocean fishing fleet comprised 6,792 vessels in 1986, slightly up from the number reported in 1985. Total direct employment in deep sea fishing remained at about 7,000 people.

In the aquaculture sector, where there was tremendous growth, the number of salmon and trout farms jumped from 157 in 1985 to 236 in 1986 and private hatcheries increased from 10 to 36. Total direct employment including operators in 1986 was estimated at about 300 persons.

Food Manufacturing

In 1986 there were 320 manufacturers of food and beverage products in B.C. The growth in provincial personal real incomes and employment and the resulting increase in consumer spending on food led to increased shipments of food and beverage products by B.C. manufacturers. The factory value of shipments rose to an estimated $3.27 billion, a healthy increase of 14.7 percent over 1985.

Consistent with this growth, the number of employees working in the food and beverage industry rose in 1986 to 20.000 from an estimated 19,500 in 1985. Average weekly earnings increased 6.2 percent to $494.92.

Food Retailing

At the retail level, sales by the B.C. food service industry, which includes restaurants, caterers, taverns and vending machines, reached an estimated $1.61 billion, up by 5.5 percent from their 1985 level. Total personal expenditures on food and beverages in B.C. were estimated at $8.1 billion in 1986, up six percent from an estimated $7.6 billion in 1985.

In 1986, B.C.'s retail food prices rose moderately by 4.5 percent. Much of the increase occurred in the price of food purchased from restaurants which rose 5.2 percent; the price of food purchased from stores rose 4.2 percent.

Retail food prices changed as follows:

Increases (%)		Decreases (%)	
fish	4.4	vegetables	5.7
meat	3.3	eggs	2.2
fruit	2.1	non-alc. bev.	2.1
dairy prod.	1.3		

Agricultural, Fish and Food Exports

Agricultural, fish and food exports from British Columbia totalled just over $1.0 billion in 1986, down 11 percent from their value in 1985. Agricultural commodity exports totalling $134 million were down two percent while fish, food and beverage exports at $872 million were up 2.5 percent. The most rapid growth in exports of food products occurred in processed fish, increasing from $428 million in 1985 to $555 million in 1986, a jump of 30 percent.

Figure Three

BRITISH COLUMBIA AGRICULTURE AND FOOD INDUSTRY 1976 TO 1986

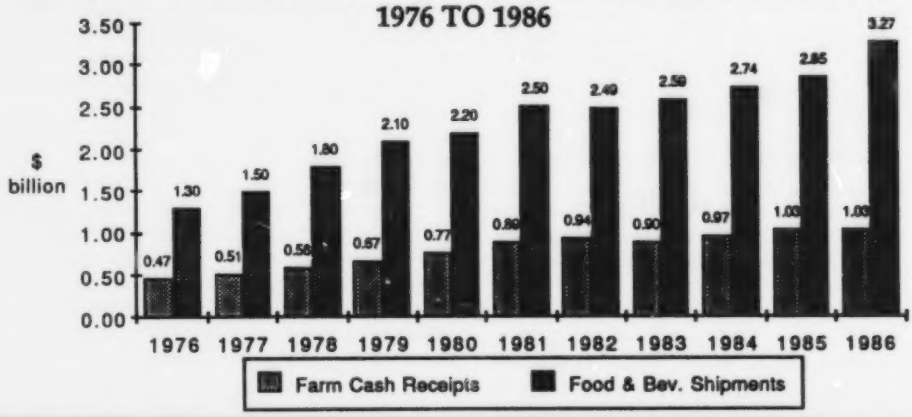


Table Two

KEY ECONOMIC INDICATORS, B.C.

	Units	1985	1986	% Change
Population	'000s	2,870.1	2,889.0	.66
Number of Farms		NA	19,063	
Estimated Cultivated Farmland	acres	NA	2,121,247	
Farm Cash Receipts	$'000	1,025,829	1,026,986	.11
Farm Expenses & Depreciation Charges	$'000	814,111	803,058	-1.36
Milk Sold Off the Farm	'000L	483,344	488,838	1.14
Poultry Production Receipts	$'000	91,659	101,533	10.77
Chicken & Stewing Hens Production	'000 kg evic.	49,977	54,223	8.47
Egg Production	'000 doz.	58,170	58,427	0.44
Apple Production	'000 lbs.	305,028	285,974	-6.25
Vegetable Production Receipts	$'000	71,266	72,691	2.00
Floriculture and Nursery Receipts	$'000	60,294	65,135	8.03
Honey Production	tonnes	2,281	2,071	-9.21
Cattle Numbers (July 1)	'000	724	690*	-4.70
Hog Numbers (July 1)	'000	249	216*	-13.25
Sheep Numbers (July 1)	'000	61.3	57.2*	-6.69
Spring Wheat Production	'000 tonnes	82	84	2.44
Canola/Rapeseed Production	'000 tonnes	29	50	72.41
Barley Production	'000 tonnes	115	174	51.30
Food Manufacturing Shipments	$MIL.	2.847	3.267	14.75
B.C. Farm Prices Index	1981=100	107.7	109.6	1.76
CPI Food (Vancouver)	1981=100	125.2	129.3	3.27

Source: Statistics Canada
* Agriculture Census, June 3, 1986

Table Three

FARM CASH RECEIPTS 1985 and 1986

	1985	1986 (prel.)
	($'000)	
Wheat	$18,721	$10,719
Oats	1,299	910
Barley	11,663	6,246
WGSA Payments	3,374	5,360
Crop Insurance	14,310	18,503
CWB Adv./Repay./Defer./Liq.	3,221	609
Canola	10,838	3,290
Potatoes	22,202	21,852
Other Vegetables	71,266	22,691
Tree Fruits	59,202	57,235
Berries and Grapes	52,085	51,362
Floriculture and Nursery	60,294	65,135
Other Crops	39,422	37,744
Total Crops	**367,897**	**351,656**
Cattle and Calves	149,590	154,040
Hogs	46,847	54,499
Sheep, Lambs and Wool	1,850	1,724
Dairy Products	234,731	231,737
Poultry	91,659	101,533
Eggs	59,537	58,886
Other Livestock	21,293	16,916
Total Livestock	**605,507**	**619,345**
Forest Products	13,461	14,854
Provincial Income Stabilization	20,809	21,399
Dairy Supplementary Payments	9,894	10,277
Deficiency & Other Supp. Payments	8,261	9,505
TOTAL CASH RECEIPTS	**$1,025,829**	**$1,026,986**

Figure Four

BRITISH COLUMBIA FARM CASH RECEIPTS 1986

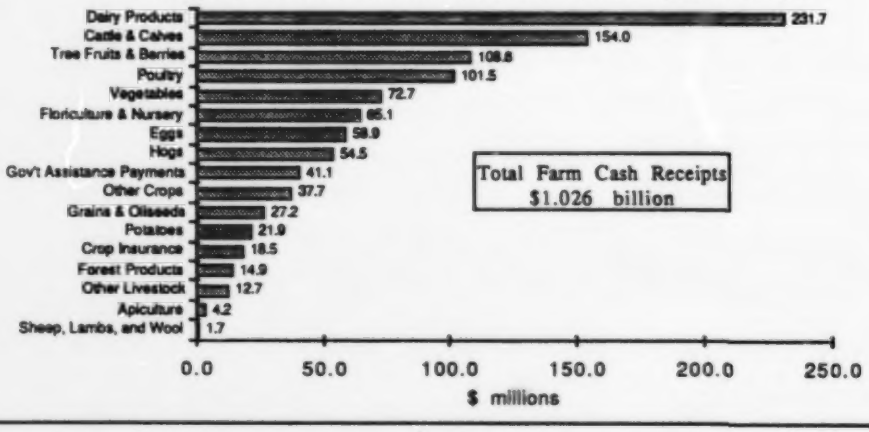


Figure Five

BRITISH COLUMBIA FARM COSTS - 1986

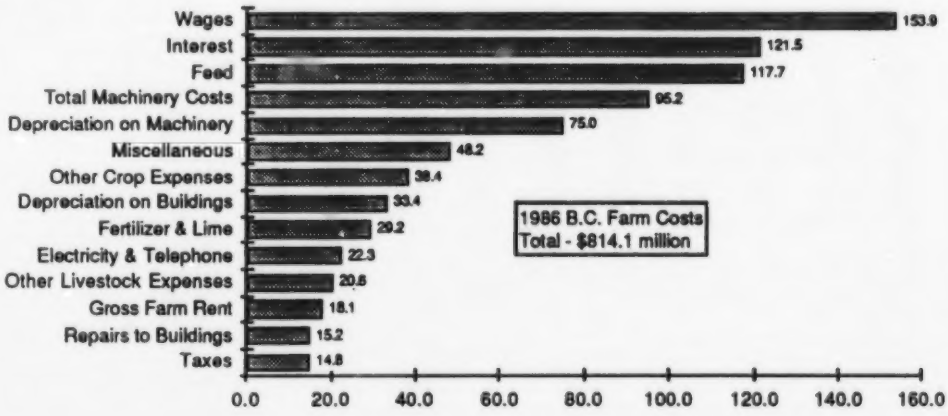


Table Four

FARM OPERATING EXPENSES AND DEPRECIATION CHARGES

	1985 ($'000)	1986* ($000)
Taxes (property)	14,517	14,807
Gross Farm Rent	17,461	18,058
Wages for Agricultural Labour	147,340	153,866
Interest on Indebtedness	129,098	121,523
Total Machinery Expenses	103,532	95,230
Fertilizer and Lime	30,689	29,225
Other Crop Expenses	36,113	38,440
Feed	121,255	117,695
Other Livestock Expenses	19,273	20,593
Repairs to Buildings	13,955	15,165
Electricity and Telephone	22,555	22,343
Miscellaneous	49,921	48,195
Total Operating Expenses	705,709	695,140
Depreciation on Buildings	33,423	31,418
Depreciation on Machinery	74,979	76,500
Total Depreciation Charges	108,402	107,918
Total Operating Expenses and Depreciation	**$814,111**	**$803,058**

* Preliminary

Table Five

BRITISH COLUMBIA FARM NET INCOME
1985 AND 1986

	1985 ($'000)	1986* ($'000)	Percent Change 1985 - 86
Farm Cash Receipts	1,025,829	1,026,986	0.1
Income in Kind	19,894	19,161	—3.7
Realized Gross Income	1,045,723	1,046,147	0.0
Expenses and Depreciation	814,111	803,058	—1.4
Realized Net Income	231,612	243,089	5.0
Value of Inventory Change	—28,834	5,421	118.8
TOTAL NET INCOME	$202,778	$248,510	22.6

*prelim.

Figure Six

BRITISH COLUMBIA FARM NET INCOME
1977 to 1986

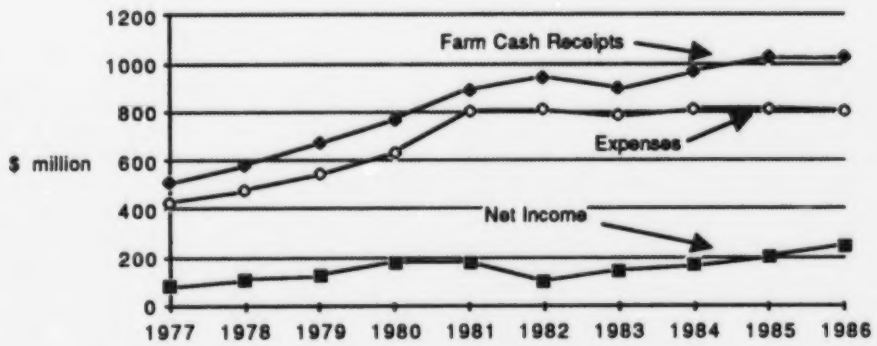
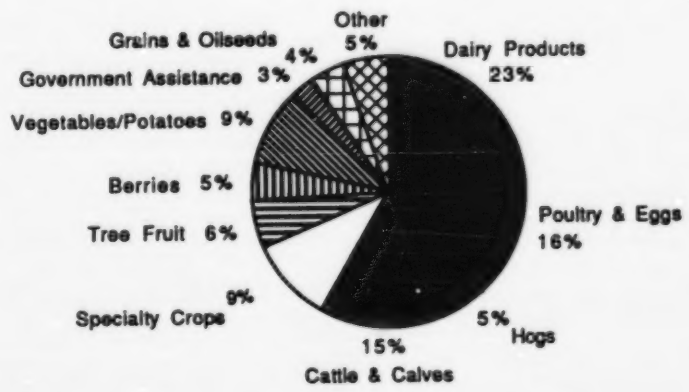


Figure Seven

BRITISH COLUMBIA
PERCENTAGE DISTRIBUTION OF FARM CASH RECEIPTS
1986



AGRICULTURE, FISHERIES AND FOOD IN B.C. AN OVERVIEW

Food production is a significant economic activity in British Columbia, providing direct employment for 39,000 people and stimulating activity in supply to primary producers, food processing, transportation, storage, distribution and retailing. In total, the industry employs between 170,000 and 180,000 people, 14 percent of the present employed labour force of the province. It contributes one out of every 10 dollars in the provincial economy, and is the mainstay of many communities around British Columbia.

The agriculture, fisheries and food sector is important not only because of the contribution it makes to the provincial economy but because it provides British Columbians with high-quality locally-produced food at reasonable prices. The industry supplies just under two-thirds of B.C.'s food requirements. But the agriculture, fisheries and food sector must be viewed in an international as well as a provincial context. The industry operates in a global environment where unstable economic conditions, unpredictable commodity cycles, intense world competition and shifting consumer demand are responsible for continuing changes in economic and market conditions. These changes pose challenges, but at the same time they offer opportunities.

In 1984, the ministry undertook a major review of industry prospects which concluded that an opportunity existed to expand output by 25 percent and create 15,000 to 20,000 new jobs over a five-year period. Major opportunities have been recognized in several areas, the most important of which is export markets. At present, B.C. exports more than 40 different agricultural products for a value of $135 million. The province also exports primary fish products valued at $18 million and processed food products valued at $827 million.

There are further opportunities in exports of berries, tree fruits, greenhouse and nursery products. British Columbia is becoming known for its expertise in animal genetics, dairy technology, poultry processing, food storage, range management, pest management, irrigation and drainage. There are opportunities for British Columbia businesses in the replacement of imported products, services and inputs. And finally, there are three new areas of production which have potential for large-scale development: aquaculture, tree farming and game farming.

The agriculture, fisheries and food industry in British Columbia has strengths which make it uniquely equipped to take advantage of some of these new opportunities. The varied terrain and many regional climates around the province are suitable for production to fit specialized market niches: small-scale production can be quickly adapted to changing consumer trends. More than 120 commodities are produced by the province's 20,000 agricultural farms and more than 10 different species of fish by aquaculture farms. More than 300 processing businesses produce a wide variety of foods and beverages for diversified markets at home and overseas. British Columbia's location on the Pacific coast gives the industry excellent access to the large, expanding Pacific Rim market.

The changing environment has prompted changes in industry and government as well. Industry is taking a more entrepreneurial approach necessary for survival in a competitive marketplace. Government is re-orienting policy and programs to help maintain and strengthen the industry in its development efforts.

1986-87 PROGRAMS AND INITIATIVES

Ministry programs in 1986-87 focussed on helping industry adopt new technologies and farm business management techniques; providing leadership in development of new markets, both at home and overseas; stimulating development through more stable incomes; and managing resources effectively.

EXTENSION AND EDUCATION

Ministry commodity specialists and district extension staff work with farm and food businesses to help accelerate adoption of new technology, information and management skills that will enable the industry to compete effectively at both the production level and in a rapidly-changing marketplace.

Much of the extension and educational programming of the ministry is delivered through the Field Operations component of the ministry. Staff are oriented towards regional programming in developing specific commodities within the local and provincial economy.

More than 200 regional extension staff in four agricultural regions of the province are in regular "front line" contact with agricultural producers and businesses. In addition, staff in seven specialist branches supply support to the regions.

Ministry extension and education projects include field trials and variety evaluations, publication of technical bulletins and other informational materials, production of audio-visual materials and seminars, short courses and workshops. All programs and projects have a strong farm business management orientation.

COMMODITY REVIEW AND PROGRAMMING

The following is a commodity-by-commodity review outlining current economic situations, industry objectives and ministry activities and programs for the animal, plant and fish industries.

ANIMAL INDUSTRY

In 1986 an Animal Industry Branch was formed, consolidating the Livestock Branch and poultry, veterinary and dairy programs. The branch plans and co-ordinates policy and programs which encourage profitable growth and development in the animal industry.

Dairy

The dairy industry is British Columbia's largest and most stable agricultural industry. In 1986 the sector had farm cash receipts of $232 million, down from $235 million in 1985. Dairy receipts accounted for more than 23 percent of the provincial total. Dairy producers sold approximately 312 million litres of fluid milk and 177 million litres of industrial milk. The fluid production met virtually all of the provincial demand while industrial production accounted for approximately one-third of the requirement, reflecting B.C.'s limited allocation of industrial milk quota reflecting the national milk marketing plan.

Ministry specialists participated in a number of short courses and seminars aimed at transferring new technology in production and marketing to dairy producers. The dairy short course in the spring of 1986 emphasized nutrition and management of the high-producing cow, while in 1987 the emphasis was on the management of the reproducing cow and silage making. More than 1,300 people attended the two short courses. A measure of the effectiveness of these efforts is that milk production in B.C. now exceeds the national average by more than 10 percent.

The quality and quantity of home-produced forage, combined with purchased cereal mixes, is a continuing concern in the overall farm management picture. In the Okanagan-Kootenay Region, ministry staff held field days and meetings at which grass and corn varieties were the major topics.

The Dairy Herd Improvement Program (DHIP) was transferred to the B.C. Federation of Agriculture's Research and Development Corporation (ARDCORP) as part of government objectives to encourage private sector delivery of services. The

transfer was accomplished without disruption in quality or timeliness of service.

Particular attention was given by the Veterinary Diagnostic Laboratory to the upswing of *Salmonella dublin* infections in dairy cattle. This organism can cause severe losses in cattle as well as illness and even death in man. A comprehensive extension program was initiated to educate dairy farmers and producers about the seriousness of this problem.

In co-operation with Regional Extension Services and the North Okanagan Dairy Advisory Committee, the Farm Management Extension Branch developed a dairy farm business analysis program to assist in making profitable management decisions.

An agricultural lenders' seminar was held which helped bank lenders better understand factors affecting dairy profitability.

The Dairy and Food Laboratory expanded its role in extension services in 1986, assisting some newer processors in setting up quality and analytical in-house testing services. Five new dairy processing businesses were established in 1986. Three of them produce specialty ice creams and two are full-line dairies. As well, two existing specialty dairy plants have expanded to include a full line of products. Staff assisted the industry in identifying new product opportunities through development of formulations for fruit flavours for ice cream and sherbets, fruit drinks for export and whey-based food products. The Dairy and Food Laboratory tested 31,658 samples for various quality components and 463,628 samples for composition.

Poultry and Eggs

Farm cash receipts for poultry and egg production totalled $160 million in 1986. Egg production was steady at 58.4 million dozen but farm cash receipts declined by almost $1.0 million. Chicken production increased 9.8 percent to 49.4 million kilograms, however prices declined by approximately 4.5 cents per kilogram. Turkey meat production was 10.1 million kilograms, representing a four percent increase. Both of these sectors have had excellent growth during the past few years as a result of changing consumer dietary habits and improved marketing by the industry. Farm cash receipts for poultry were up substantially, from $91.6 million in 1985 to $101.5 million in 1986.

Ministry staff worked with the B.C. Chicken Marketing Board on the Broiler Health Program which is aimed at reducing British Columbia's above-average broiler losses due to deaths, culling and condemnations. The program now includes monitoring of grower chicks. Growers indicate that the quality of chick they receive has improved considerably. New recommendations of vaccine regimens in the breeder stock has increased disease protection in breeders and their chicks.

Salmonella pullorum was isolated from a submission of chickens from the Abbotsford area at the end of the 1986-87 fiscal period. This potentially devastating infection was reported to federal authorities who slaughtered a number of small poultry flocks and destroyed the affected eggs. Action was taken before the infection spread to any large commercial poultry flocks, preventing potential losses in the millions of dollars.

Red Meat Programs:

Within the national agricultural strategy, tripartite stabilization agreements involving the federal and provincial governments, and the producer groups, were analysed in an effort to determine how provinces with their own stabilization programs could participate in the tripartite programs. Programs for the red meat sector, i.e. beef, hogs and sheep, were being closely evaluated during 1986 in an attempt to have changes made to the plan and therefore allow British Columbia access to federal cost-sharing. This evaluation included a study of government assistance to the red meat sector.

Beef

Market improvements for beef in 1986, combined with low feed costs, have brought renewed optimism to the beef industry. Farm cash receipts to the province's 4,200 producers for sales of cattle and calves increased by five percent to $157 million. At the end of 1986 the number of cows and heifers had increased to 256,000 head, an increase in the size of the provincial beef herd after several years of herd liquidation due to financial pressures.

Extension staff worked to help producers improve financial and production management and looked for alternative crops to reduce costs and spread risk. Livestock specialists from throughout North America were keynote speakers at several seminars in the Thompson-Cariboo Region. A beef management workshop, feedlot seminar and breeding seminars

were all well attended. Other seminars and field days dealt with high tensile smooth wire fencing and stock water development. In the Okanagan-Kootenay Region calf health seminars held prior to calving season received an excellent response from producers and are expected to have a positive impact on calf survival rates. In the Central-Peace River Region seminars were conducted on crossbreeding, herd health and co-ordinated resource management. The ministry is co-operating with the B.C. Cattlemen's Association on Beefup, a total management program that emphasizes profitability in production, finance and marketing.

Late summer gains of calves on range is poor, reducing returns to beef producers. A project in the Thompson-Cariboo Region looked at the potential benefits of early weaning of calves on high quality irrigated pasture. The trials showed early-weaned calves created significantly higher returns per animal compared to late-weaned animals.

The Farm Management Extension Branch developed a beef planning project to help farmers with physical and financial plans for managing their farm business. A computer model was developed to produce budgets, projected income and expense statements, and cost flow projections. More than 20 ranchers participated. Many were able to find areas of their operation where they could make cost savings and improve profits as well as avoid bad financial decisions.

British Columbia feedlot operators could not compete with high prices offered by Alberta feeders and many yards went through the winter at 50 to 70 percent capacity. To offset the disadvantages faced by the feeder cattle industry as a result of the Alberta government's Feed Grain Marketing Adjustment Program, the B.C. government initiated the British Columbia Beef Cattle Feed Grain Market Adjustment Program. The program pays a grant of $21 per tonne of feed grain purchased and used by B.C. beef feedlots and background operations that feed beef animals for weight gain for slaughter purposes. There were 113 applications for assistance totalling approximately $381,797. An additional 23 applications for assistance totalling $74,578 were referred to a review board for further recommendations.

In early 1987, a $1.5 million program funded by federal and provincial governments was announced under the ARDSA Program to provide grants of up to 33.3 percent of approved eligible capital costs for construction or expansion of feed storage facilities. The installation of such facilities is expected to result in improved feed quality, reduced forage and silage losses, increased weight gains and improved productivity of the British Columbia beef herd.

The Canada-British Columbia Livestock Drought Assistance Program was implemented to reduce financial distress and encourage livestock producers to maintain cattle and sheep breeding stocks in areas that had low feed production in 1985 because of drought. Grants of $60 per bred cow and $12 per bred ewe were paid to farmers in the North Peace River, South Peace River, Prince George North, Prince George South and Omineca electoral districts. To year-end, $4,356,879 was paid, with provincial share totalling 50 percent. (Refer to Table Twenty-three) In the remaining areas of the province, grants of $30 per bred cow and $6 per bred ewe were made available to 245 farmers for a total of $553,590, with a provincial share of $276,795. Total joint assistance under both programs was $4,910,466.

Swine

B.C.'s hog producers received record prices during 1986 with farm cash receipts increasing by 16 percent over 1985 to $54.5 million. Feed prices were lower, resulting in increased net farm incomes which allowed many producers to reduce high debt levels accumulated in recent years. Sales of 327,477 head were down by four percent compared to 1985 and the number of producers declined by a similar percentage to 277.

The goal of swine extension is to help pork producers be more profitable by producing more pigs. Emphasis is on better piglet survival, better breeding and selection and growing pigs efficiently through better feed conversion, growth rates and carcass quality. Extension activities were aided through the establishment, in co-operation with the Pork Producers Association, of producer study groups in the main hog production areas of the province. Continued improvement in carcass quality, reflected in an 11 percent increase in the number of hogs marketed with a grade index between 105 and 114, is in part attributable to ministry extension activities, which included a pork production home study course, short courses and seminars. The ministry's media unit completed a four-part swine production series to go with the Pork Production Home Study Course. A two-day artificial insemination course attracted 20 pork producers.

A major objective is to upgrade British Columbia swine herds so they are capable of supplying replacement breeding stock for commercial hog producers, reducing annual imports estimated at $1.5 million. The Swine Herd Health Program, which relies heavily on the services of the ministry's veterinary diagnostic laboratory, was redesigned in 1986 and slaughter checks show marked improvement in health and production status of B.C. herds in a few short months.

The monitoring of swine submissions to the ministry diagnostic laboratory revealed a significantly widespread infection of *Leptospira bratislava*. A field trial is underway to determine whether it is a significant problem in pigs and whether an experimental vaccine can help limit the spread of the infection.

Sheep

The number of sheep and lambs on B.C. farms declined from 55,000 to 52,000 during 1986-87. Farm cash receipts were $1.7 million for sales of sheep, lamb and wool. Trials conducted by the ministry entomologist in Cloverdale determined that as high as 77 percent control of sheep keds, a parasite, is achieved when sheep are treated with Ivomec for nose bots. This could eliminate the need for specific application of ked control products in the spring if sheep are being treated for nose bots, with potential savings to the industry of $30,000 annually.

FISH INDUSTRY

In August of 1985 the ministry was designated "lead agency" in government for development of aquaculture. An Aquaculture and Commercial Fisheries Branch was created in August 1986 by combining the programs and resources of the former Marine Resources Section of the Ministry of Environment and Parks with the former aquaculture program of the Ministry of Agriculture and Fisheries.

Aquaculture

The production of aquaculture farms increased dramatically in 1986. Total value of the aquaculture harvest was $6.0 million, a 31 percent increase over 1985. (See Figure Eight)

From 10 salmon farms in 1984 and 37 in 1985, the salmon farming industry expanded to 82 fishfarms in 1986, using 270 hectares of Crown foreshore. By December 1986 a further 73 applications for tenure had been approved, indicating another year of dramatic growth for 1987. Approximately 280-300 people were directly employed on the farms in 1986.

Four species were commercially cultured in 1986: Chinook and Coho salmon, Rainbow trout and Atlantic salmon. Value of the salmon harvest was $2.9 million in 1986. Imported from Scotland as eggs in 1985, Atlantic salmon were introduced into net pens for the first time in 1986. The number of commercial hatcheries licensed to hold salmon nearly doubled in 1986 to 36 from 19 in 1985. In 1986, there were three operating feed mills in British Columbia, an increase from one in 1985. Another two mills are preparing to begin operation in 1987.

At year-end the oyster industry comprised 336 active tenures held by 209 growers using 1,542 hectares of foreshore. This is an increase of seven percent in the number of growers since 1985 and an 11 percent increase in total hectares leased. Oyster production in 1986 was approximately 80,000 U.S. gallons and was comprised almost entirely of one species, the Pacific oyster. The harvest was valued at $2.5 million.

The freshwater aquaculture industry in 1986 consisted of 157 licensed trout farms. Although the principal species cultured on these farms is rainbow trout, carp is also commercially grown. Production was approximately 112 tonnes, of which more than 99 percent was trout. The value of the harvest is estimated at $0.6 million.

The ministry's provincial aquaculture co-ordinator worked with representatives of the aquaculture industry to prepare a strategic plan for the aquaculture sector. The plan identified the need for fish health services to maintain the health of farm-raised stocks. A fish health veterinarian joined the veterinary program of the Animal Industry Branch and is providing laboratory services to assist in diagnosis of causes of mortality.

An intensive course was conducted in conjunction with the B.C. Veterinary Medical Association to upgrade the aquaculture medical skills of 15 veterinarians now in private practice. A second course is planned in the new fiscal year.

Several groups or individuals have shown interest in providing laboratory services with ministry veterinarians as backup. Seminars were organized to

upgrade the disease recognition and treatment skills of aquaculturists.

A publication, *Financing and Incentives for Aquaculture Production in British Columbia*, was prepared by ministry staff. More than 4,000 copies were distributed by the end of the fiscal year, indicating the widespread interest in this new industry.

The ministry worked with the British Columbia Salmon Farmers' Association to examine alternative approaches to marketing future volumes of fish which are anticipated to increase to 1,500 tonnes in 1987 from 500 tonnes in 1986. Methods for handling fish and quality standards are being developed to ensure production of fish that meet consumer standards in the competitive international food marketplace. An analysis of demand for B.C. farmed salmon in world markets was initiated.

The increased interest in economic opportunities offered by aquaculture resulted in hundreds of unanticipated applications for foreshore tenures. Concerns were expressed by coastal residents and other resource sectors that new salmon farms would cause serious environmental problems. On October 31, 1986, the Minister of Forests and Lands ordered a moratorium on issuance of tenures and appointed Mr. David Gillespie as Commissioner of Inquiry to examine the industry. The ministry co-operated with the Ministry of Forests and Lands and other provincial ministries as well as local government and interest groups in planning studies which resulted from the Gillespie recommendations.

The ministry examined more than 975 tenure applications and 327 production plans referred by the Ministry of Forests and Lands. Some 69 finfish and 60 shellfish inspections of existing tenures were conducted to ensure that leases were making effective use of Crown foreshore.

As both commercial fisheries and aquaculture production are dependent on environmental quality, projects in habitat protection, stock assessment and maintenance of water quality were continued. In Sechelt Inlet, where there is a concentration of fish farms, the ministry has ongoing studies which measure the impact of finfish aquaculture on water quality and ensure that the operation of salmon farms does not have a detrimental effect on water quality.

To facilitate further development of the shellfish sector, co-operative multi-year projects with the Federal Pacific Biological Station in Nanaimo were funded. One project is designed to develop techniques for domestic rearing of scallops which would diversify business opportunity. A second project is examining the incidence and distribution of shellfish diseases in order to reduce mortalities in the cultured stock and to improve U.S. market opportunities.

Commercial Fisheries

The B.C. commercial fishing industry experienced an excellent year in 1986, the second consecutive year of good returns. Total fish harvest reached 224,000 tonnes, an increase of seven percent over 1985. The landed value rose to approximately $382 million. In comparison to average B.C. landings for the past five years all major species groups were up significantly except for herring which was down by 50 percent.

While overall landings increased, it has been projected that the wholesale value generated by the fish processing industry was down marginally to $690 million. A comparison of quantity landed, landed value and wholesale value for each major species group for 1985 and 1986 are shown in Table Six.

The fishing fleet is comprised of approximately 6,800 vessels, and 19,000 licences are issued annually. However the industry provides employment on average for 7,000 commercial fishermen. In addition to those directly employed in primary fishing, about 25,000 people are employed in jobs related to the fishing industry, such as supply, processing and distribution.

Provincial inspectors of fisheries are responsible for licensing fish processors, buyers and vendors under the Fisheries Act (British Columbia). All facilities in British Columbia involved in the handling of fish are obligated to meet regulatory requirements outlined in the Fish Inspection Act (British Columbia). Licences for 207 processing plants, 453 fish buyers and 203 fish vendors were issued in 1986. Total revenue generated was approximately $160,000. Approximately 1,100 inspections of these facilities, along with fish retail outlets and restaurants, were conducted during the year. There were eight prosecutions.

Branch staff prepared briefs and issue papers on the Section 301 trade petition by Alaskan processors and the impact the Canada-U.S. trade negotiations may have on the commercial fishing industry. The

Table Six

QUANTITY AND VALUE OF B.C. FISH LANDINGS AND PRODUCTION BY SPECIES 1985 AND 1986

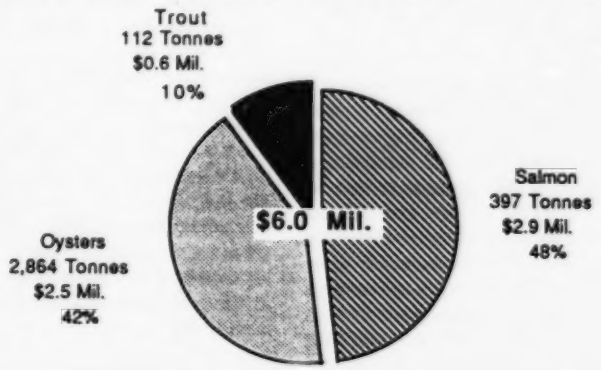
	1985 Landed Quantity (Tonnes)	1985 Landed Value ($ million)	1985 Wholesale Value ($ million)	1986 Landed Quantity Tonnes	1986 Landed Value ($ million)	1986 Wholesale Value ($ million)
Salmon 1	104,024	247	512	100,242	266	536
Herring 2	25,955	63	103	16,491	46	88
Halibut 3	4,703	14	19	5,389	24	31
Groundfish 4	58,568	32	64	81,935	42	76
Shellfish	16,384	22	30	16,729	24	35
Total	**209,634**	**$378**	**$728**	**220,786**	**$402**	**$766**

Footnotes
1 Includes salmon roe. Wholesale value includes production derived from U.S. salmon.
2 Includes herring spawn on kelp.
3 Includes landings at U.S. ports.
4 Includes hake delivered to foreign vessels in co-operative fishing arrangements and "other fish" not elsewhere included.

Source:
B.C. Annual Fisheries Production Statistics — Ministry of Agriculture and Fisheries.
Annual Summary of B.C. Catch Statistics — Canada, Dept. of Fisheries and Oceans.

Figure Eight

BRITISH COLUMBIA AQUACULTURE PRODUCTION - 1986



ministry put forward provincial positions to Canadian representatives at the Canada-U.S. Salmon Commission negotiations and meetings of the International North Pacific Fisheries Commission involving Canada, the United States and Japan.

PLANT INDUSTRY

Tree Fruits

Tree fruit production in British Columbia is concentrated in the Okanagan and Similkameen Valleys. The industry is fourth in agricultural cash receipts after dairy, beef and poultry, producing a crop valued at $57 million in 1986, down from $59 million in 1985. The 1986 crop year was the lowest of three straight low production years for orchardists in the southern interior of the province. Production was 142,000 tonnes, down 20 percent from 176,000 tonnes in 1985. A mid-November cold snap in 1985 was responsible for the reduced production, along with a killing frost at apple blossom time in 1986. Although prices for product have improved, the generally low revenues have hindered recovery and rejuvenation efforts.

Extension programs in the Okanagan-Kootenay Region addressed current financial concerns by emphasizing pruning, thinning, low-cost pest management practices and high-density planting.

The tree fruit industry has high production costs relative to its major competitors, requiring that B.C. produce a very high quality product as economically and efficiently as possible. Staff worked with Agriculture Canada and producers to develop a Tree Fruit Strategy for B.C. Three major objectives were established: to assist in the immediate financial recovery of individual producers, improve the long term profitability of individual orchards and ensure the long term viability of the total industry.

Conversion of old orchards to high density plantings is seen as the best way to improve industry growth. Staff have been focusing on training systems for dwarf-type trees at meetings and field days, through media releases and demonstration trials and by ministry-led grower tours to Europe and Eastern North America. The dwarf-type trees, if managed properly, produce higher-quality fruit earlier after planting than standard size trees. All advisory services and demonstration work stress management of high density systems and the production of the type of fruit that brings the greatest net returns from the marketplace.

The Farm Management Extension Branch developed integrated production and financial information on high density tree fruit production, including development of computer templates and planning guides to analyze production and financial decisions in the orchard business. The branch worked with industry to develop a computer program for analyzing fruit packouts to demonstrate the impact on the growers' profitability from market returns by grade, size and variety.

Early in 1986, Cabinet approved the implementation of a new $10 million Orchard Renovation Incentive Program to be funded through ALDA. (Refer to Tables Thirteen through Sixteen) The program provides up to $50,000 per orchardist to remove non-productive trees and replant the area with high-density trees to increase yield, improve fruit quality and to improve industry profitability. The $50,000 incentive is in the form of a low-interest loan (one-half prime rate) repayable over a 15-year period.

A Grower Loan Program for British Columbia tree fruit producers who market pears and apples to British Columbia Tree Fruits Limited was approved by Cabinet and implemented as a new program in 1986-87. The program enables payments to producers when the apple and pear crop is delivered to the packinghouse. The province pays the interest cost on the loan from a commercial bank to British Columbia Tree Fruits Limited to fund these payments until revenue from the sale of the crop is received.

Ministry staff have also led investigations into suitability of wind machines for frost protection. A partial budget on the economics of wind machines was developed by farm management staff.

Ministry extension activities have contributed to the increasing acceptance of dwarfing rootstocks by apple producers. Use of the full dwarfing rootstock Malling 9 increased from less than 0.5 percent in 1980 to nearly 11 percent in 1986 and use of semi-dwarfing rootstocks also showed significant increases.

Only 27 diseased trees were found in 1986 during the little cherry disease survey, carried out by the Crop Protection Branch. The level of infection has steadily declined since 1982. Without this control program, the disease by now would likely have been responsible for the loss of about 75 percent of the annual $4.0 million cherry crop.

Control of the codling moth in commercial apple and pear orchards is essential to economic fruit production. Methods were developed in conjunction with federal and provincial specialists to enable growers to accurately determine if and when pesticide sprays should be applied. The method has resulted in a decrease in the number of insecticide applications required, which reduces costs to growers as well as avoiding harm to the environment.

Crop Protection and Engineering Branch staff continued tests of electric fences to exclude deer from orchards. Electric fencing can prevent most deer damage at a cost as low as 25 percent of conventional fencing and is becoming widely used by growers.

Grapes

Commercial grape production in the province, which is almost entirely centred in the Okanagan Valley, was adversely affected by the severe cold weather in November, 1985. Wine grape production in 1986 was 11,890 tonnes with a value of $8.1 million. Effective control of powdery mildew remains a concern following serious outbreaks in a number of major vineyards. More than 400 acres of grapes were removed in response to a red wine surplus reduction program. Concerns over suitable varieties for replanting were dominant issues for growers, along with pricing negotiations for the 1986 crop and possible impacts on the grape and wine industries of free trade between Canada and the United States.

Continued efforts to identify desirable and culturally suitable varieties is essential if interior growers are to meet market requirements. During the year, a report on an 11-year study of a number of imported grape varieties was published. The results identified a few of the more desirable varieties and a large number that are not suitable.

Trials are continuing on Vancouver Island near Duncan to identify the best plant material for potential commercial grape growers in the coastal area. A bird-proof enclosure of plastic netting was installed to protect the entire trial vineyard and demonstrated at a field day in October. This method of preventing bird damage is cost-effective for both grape and blueberry production. If adopted by all growers of these crops, it would prevent annual losses estimated at $2.0 million. A summary of harvest data from the demonstration vineyard is available.

Berries

The heavy frosts of November 1985 and February 1986 took a toll on berry production in the Fraser Valley.

Total 1986 raspberry production was about 11,290 tonnes, down slightly from about 13,434 tonnes in 1985. Heavy winter frost in November 1985 and February 1986 reduced the number of fruit buds by 50 percent. Wet, cool weather delayed harvest in most areas. Raspberry root rot destroyed some plantings of susceptible raspberry varieties, but the temporary registration of Ridomil for 1987, in response to an urgent request from the Crop Protection Branch to federal authorities, is expected to help control this problem.

Prices were very good with growers receiving as high as $2.65 per kilogram for fresh sales, and a processing price of about $2.20 per kilogram. This was up considerably from the $1.36 per kilogram paid for raspberries the previous year.

The Marketing Branch provided background and analysis for the raspberry industry in its dispute regarding anti-dumping and countervailing duties on shipments to the United States. The efforts were only partially successful as some anti-dumping duties and the Washington promotion assessments continue to be collected.

A raspberry certification program, begun in 1985, continues to provide high-quality disease and insect-free raspberry planting stock.

Blueberry crop volume was down sharply due to frozen fruit buds. Only 4,244 tonnes were harvested compared to production of 6,859 tonnes in 1985. Prices rose to a high of $1.63 per kilogram on average. The blueberry industry consists of 300 producers farming about 1,500 hectares. B.C. is the third largest producer of blueberries in North America behind New Jersey, which produces 13,500 to 18,000 tonnes, and Michigan, which produces 22,000 to 32,000 tonnes. B.C. possesses the best combination of climate and soil in North America for the production of high bush blueberries. Land in production is expected to increase at the rate of 80 to 120 hectares per year, with production reaching 9,000 tonnes by 1989-90. The Farm Management Extension Branch, in co-operation with the ministry's blueberry specialist, developed a microcomputer model to simulate the financial situation of a new planting. The model generates a nine-year cashflow budget and income statements.

The winter was hard on strawberry plantings with up to 50 percent of roots and crowns suffering severe winter damage. Total harvest in 1986 was 4.7 million kilograms, down from the previous year's production of 6.4 million kilograms. 1986 prices were up to $1.54 per kilogram compared to $1.03 per kilogram in 1985.

A project funded under DATE assessed the potential for commercial fresh market production in B.C. of everbearing strawberry varieties currently grown in other areas of North America. Three varieties appear to be highly marketable. Their production here could lead to decreased volumes of imports.

Production of cranberries was also less than originally estimated with 8.2 million kilograms harvested in 1986. Prices were good: $2 per kilogram for fresh and $1.59 per kilogram processed for a total farm gate value of $16.5 million.

Vegetables

In 1986 B.C. growers produced an estimated 159,000 tonnes of fresh vegetables from 10,077 hectares with a farm gate value of nearly $56 million. The Lower Mainland accounts for 80 percent of total provincial vegetable production in the province. B.C. produces 37 percent of the fresh vegetables supplied annually to Vancouver markets. Most of the remainder comes from California and Washington.

The volume of the 1986 processing vegetable crop was well down from that of 1985 due to reduced acreage, and for many crops, lower-than-average yields. There were 40,290 tonnes of processing vegetables produced in 1986, compared to 45,749 tonnes in 1985. The value of the total processing vegetable crop was $10 million, down from $12.1 million in 1985.

Vegetable commodity extension programs in the South Coastal Region concentrated on marketing, quality and economics. The annual Growers' Short Course in February, one of the largest extension events in the province, attracted more than 600 growers, agribusiness and government personnel. The program brings the latest production and marketing information to the industry. A Grower Digest, containing highlights of the short course talks and presentations, was printed and distributed throughout the province by private commercial interests under the guidance of ministry personnel.

The quality of the potato crop was generally good although tuber size was down and production was below average. In general potato sales have been steady and prices fair. This is a direct result of the anti-dumping tariff protection invoked last year. Ten field inspections for bacterial ring rot of potatoes were carried out in 1986. No ring rot was found, confirming that the disease is at a low level at present. The annual potato short course was attended by more than 600 growers, agribusiness and government personnel. The course brings the latest production and marketing information to the industry.

Production and quality were good for the 1986 seed potato crop and there were few disease problems. Sales were slow due to overproduction and weak commercial potato markets throughout the Pacific Northwest. Financial management information for seed potato production was prepared and provided to growers to help in managing their operations.

Spring frosts and 1985-86 winter damage reduced asparagus yields by one-half. An asparagus variety trial established in 1979 with support from the National Asparagus Research Fund was concluded in 1986. Four varieties out of 18 initially tested have been found to be consistently above-average producers. Ministry staff co-operated on a survey of commercial asparagus fields for two asparagus viruses, which together cause significant yield reductions in Washington State asparagus fields. Only one was found, but the discovery confirmed that infected seeds have been used and that if the other virus, which is insect-borne, found its way into British Columbia, serious damage might result.

The Asparagus Production Incentive Program pays a grant to reduce interest costs on eligible loans used to establish new acreages of asparagus production. Fourteen participants have enrolled in the program, planting 215 hectares of asparagus. Seven applicants were eligible for the 1986 program. Reimbursement benefits paid in 1986, representing claims on interest paid in 1985, totalled $8,570. Benefits paid to date are $56,575. The program has been cancelled effective the 1987-88 fiscal year.

A celery yellowing and stunting disorder in the Cloverdale area, which caused a crop loss of $100,000 in 1985, caused an additional $65,000 loss in 1986. As a result of a project funded under DATE and supervised by the ministry plant pathologist, the cause was identified as a fungus, *Fusarium oxysporum*. No effective treatment is available, and the best method of

control is to grow resistant celery varieties or to grow alternative crops.

Horticultural production in B.C.'s north is hampered by a short growing season. The horticulturist in the Central-Peace River Region successfully demonstrated the use of plastic tunnels and plastic mulches to enhance the growth and maturity of vegetable crops in the interior. The work has been successful in increasing earliness and total production of warm-season crops, particularly field cucumbers. The use of plastic culture has resulted in fewer hectares being planted to cucumbers because of possible over-production on the farms, releasing the land for other types of crop production. Plastic culture advanced the cutting dates of gladiolas by seven to 10 days. The technology is now being widely adopted by growers for use on a commercial scale.

Cereals and Oilseeds

Grain and oilseed production was estimated to be 460,000 tonnes from 256,000 hectares. This is about 50 percent above the drought-depressed production of 1985. However farm-gate value declined by 16 percent to an estimated $43 million. The grain price war between the United States and the European Economic Community drove world grain prices down to unprecedented levels. Grain producers are facing the worst cost-price squeeze of this century.

Severe drought in the 1985 crop year and poor harvesting conditions in previous years created a major cash flow problem in the Peace River region. The Canada-British Columbia Crop Drought Assistance Program helped crop producers maintain a viable operation by providing grants of $15 per acre to eligible farmers who had seeded a minimum of 120 acres, up to a maximum 3,000 acres. Grants totalling $7,218,900 were provided to 758 applicants with a provincial share of $3,609,450. (Refer to Table Twenty-three)

The Straw-for-Feed Program was implemented to encourage grain farmers in the North Peace River, South Peace River, Prince George North, Prince George South and Omineca electoral districts to retain straw for sale to livestock producers for feed, rather than burn it or plow it into the soil. Grain producers received a grant of $5 per tonne of straw sold to livestock producers. To year-end, payments of $94,738 were approved on more than 18,800 tonnes of straw sold by 131 farmers.

Staff conducted 34 field trials to test the suitability of new crops, identify superior varieties and demonstrate improved crop management practices. In the Peace River, the Grow With Canola program demonstrated that close attention to crop management can reduce costs of production. In one demonstration, the cost per tonne was reduced to $130 from $160.

Other trials identified management practices to reduce the effects of disease such as root rot in canola, snow mould and bunts in winter wheat, and the effect of leaf and head diseases in wheat under an intensive management system in the coastal region. A strain of winter wheat selected in the Peace River region has shown some tolerance to snow mould in initial trials, resulting in higher yields than Norstar.

There is new interest in cereal production as an alternative cash crop in the South Coastal Region. An intensive cereal management seminar held in Chilliwack attracted more than 150 people.

Pedigreed Seed

There were 3,348 hectares of pedigreed forage seed and 2,316 hectares of cereal and oilseeds produced in 1986, with an approximate value of $6.0 million. The U.S. Farm Bill and severe drought in some seed-producing regions in 1985 resulted in strong forage seed prices in 1986, however low grain prices resulted in low cereal seed prices.

A ministry field evaluation program demonstrated that a new high-yielding early barley variety, Jackson, produces 15 percent more than the standard, Gateway. Jackson will be available for commercial use in 1987.

As a result of ministry trials, hybrid sunflower seed was produced on a commercial scale for the second year in the North Okanagan.

Forage

Pasture, range, hay and silage are the primary source of feed for beef and dairy cattle, horses, sheep and goats. There were 1,724,000 tonnes of hay produced from 307,572 hectares, valued from $45 to $120 per tonne. The area planted to field corn was 10,000 hectares.

Ministry specialists co-authored a forage home study course sponsored by the Faculty of Agricultural Sciences, UBC. They also conducted field trials, demonstrations, forage competitions and

seminars. Protein and energy are the major concern because they are the most expensive to supplement. The Coastal Forage Competition had 186 entries of hay and silage with an average crude protein content of 15.2 percent. Forage competitions were also run at Prince George, Smithers and Vanderhoof.

Forage cultivar testing was conducted in co-operation with producers and the Canadian Seed Trade Association. Results are reported by the B.C. Forage Council and are used extensively by the B.C. seed trade for support of cultivar registration applications and for variety recommendations.

Lack of winterhardiness of verticillium wilt-resistant alfalfa varieties was a major factor in alfalfa winterkill. This necessitated the reseeding of 11,000 hectares at a cost of $2.5 million to growers on the Fraser and Thompson River benchlands. The ministry tested two new winterhardy varieties, Barrier and Oneida VR, which had 36 percent better survival than the commonly-grown variety WL 316.

Elk and deer damage to standing forage crops in the East Kootenay continued to be serious on some ranches, and a major initiative to assess and reduce damage was begun in co-operation with the Ministry of Environment and Parks.

Nursery

The nursery industry continued to show moderate growth despite record low winter temperatures in 1985-86. Severe damage occurred throughout the Pacific Northwest and some B.C. growers had losses of 40 percent of their stock. Sales of nursery stock were $27.4 million from about 350 growers. About 50 percent of stock was exported, primarily to the prairies. New markets are developing in Ontario and the northwestern United States.

Weed control continued to be a worrisome problem for container growers. The ministry addressed this problem with three trials which identified two herbicides as effective for weed control. In another trial, hog fuel was demonstrated to be a good alternative to sawdust as a potting medium at half the cost.

Following Agriculture Canada's 1972 quarantine on Fraser Valley junipers, one of the hosts of pear trellis rust disease, the ministry developed a clean-up and certification program. Three pear surveys were conducted under the program in 1986. Two fairly small infected areas were found. Approximately 350 junipers were removed and an additional 120 placed on a list for removal over the 1986-87 winter. This work resulted in the certification of 500,000 junipers in nurseries which meant the export of about $500,000 worth of junipers in the 1986-87 shipping season.

Greenhouse

The greenhouse industry continued to expand in 1986. Value of production increased 21 percent to $52.5 million. The vegetable sector showed the strongest growth, increasing 50 percent over 1985 with sales of $14.7 million. The ornamental sector increased six percent in sales to $37.8 million.

The ministry conducted six demonstration projects and co-operated with other agencies in grower seminars. An expert in climate control and greenhouse heating was brought to British Columbia from the Netherlands under DATE funding. He spoke at a greenhouse gas heating seminar sponsored by B.C. Hydro and the ministry. More than 240 growers, equipment suppliers, students and fieldmen from all over the province attended.

Two audio-visual programs on European greenhouse technology were completed by the ministry's media unit to demonstrate possible applications to British Columbia's greenhouse industry.

The western flower thrips continued to be the most serious pest of greenhouse cucumbers, causing reduced yields for almost all Fraser Valley growers. At present, there are no effective insecticides registered for this pest, however a predatory mite has been found to be effective in controlling thrips. Small-scale commercial trials conducted by the ministry entomologist at Cloverdale were successful and it is expected that most cucumber growers will be using this biological agent in the 1987 growing season.

The tomato russet mite, previously unreported in British Columbia, was found in one tomato greenhouse in Surrey; it was controlled by the insecticide Kelthane. This is a serious pest of tomatoes in many areas of the world, causing millions of dollars in crop losses.

The Greenhouse Assistance Program was offered to the greenhouse industry to encourage improvements in labour and energy efficiency. During the year, 101 applications were received, and 86 contracts approved for 67 operators. Total expenditures by operators were in excess of $6.0 million of which more than $4.0

million qualified for incentive grants. Contracts were issued which will result in grant payments to the industry of $934,000 for the year. The majority of improvements involve heating and energy-related projects such as thermal/shading blankets or microprocessors to better monitor shifts in temperature and outside conditions. (Refer to Table Seven) Since 1985, every dollar committed by the program has resulted in $5.30 in expenditures by the private sector. This represents an investment of $7.1 million in the greenhouse industry since May, 1985.

Weed Control

Crop losses due to weeds in British Columbia exceed $41 million and costs of control exceed $8.0 million annually. To assist local governments in enforcement of the Weed Control Act and to create public awareness, the ministry provided $310,000 in grants-in-aid of local weed control programs. In addition, a grant of $80,000 was provided to the B.C. Cattlemen's Association to assist local livestock associations with knapweed spraying. Knapweed poses a continuing threat to B.C. rangelands. Spray programs are resulting in the decline of knapweeds in many key areas of the province.

Biological control continues to be an important method of controlling weeds. In total, 600,000 insects were distributed against eight different species of weeds throughout the province. Root-boring Sphenoptera beetles were redistributed to southern interior sites where knapweed is a problem. The beetles account for a 43 percent seed reduction in knapweeds. Metzneria seed-head moths were also distributed to knapweed sites and three new root-feeding moths were in-troduced for propagation. The ministry contributed $25,000 to the Commonwealth Institute of Biological Control for screening and introduction of agents.

Apiculture

The apiculture industry consists of 350 commercial and 5,000 home beekeepers with a total of 55,000 hives. The value of all apiculture products including honey, pollen, beeswax, package and queen bee sales and pollination rentals was $4.9 million, a 12.5 percent decrease from 1985. This decrease was due to climatic factors resulting in lower hive productivity.

In response to the threat of mites and Africanized bees, the ministry encouraged self-sufficiency in package and queen bees. As a result, queen bee production increased 58 percent and package bee production increased 78 percent in 1986. There is potential for expansion of this sector as 70 percent of queen bees and 90 percent of packaged bees are imported.

Apiculture specialists conducted six major projects to develop and demonstrate new technology. For example, tests showed that the Jenter Queen Rearing Comb for queen bee production will reduce labour by five percent and produce 15 percent more queens. Field demonstrations illustrated modern techniques of package and queen bee production.

Table Seven **GREENHOUSE ASSISTANCE PROGRAM**

Grants to Individual Operations as of March 31, 1987

	1986-87	1985-86
No.	67	28
Value	$934,000	$419,000

Percentage of Grants by Commodity and Project

Commodity	1985-87 inclusive	Project	1985-87 inclusive
Tomato	15	Glazing	9
Cucumber	20	CO_2	14
Flowers	21	Blankets	14
Ornamentals	39	Lighting	9
Other	5	Computers	14
		Heating	23
		Transportation	8
		Other	9

TRADE AND MARKETING

Ministry staff were involved in a number of marketing-related activities in 1986. They included overseas trade missions, activities promoting the use of B.C. food products, programs directed at the institutional market and seminars on the use of B.C. food products.

Market development continued to be a major emphasis in 1986. British Columbia's agriculture, fisheries and food industry was host to the world at Canada's first international food and beverage trade show, Food Pacific '86, in Vancouver's B.C. Place Stadium, August 29 to September 2. The show attracted 532 exhibitors, representing some 800 companies, from 30 countries. More than 18,000 trade industry visitors from 59 countries registered for the show. Ministry staff were actively involved in seeking the participation of international governments and companies, staging the show and pursuing sales leads. The economic impact of Food Pacific '86, based upon Canadian reported and projected sales, accommodation, food, travel and tourist expenditures and exhibition construction and production expenditures, totalled some $122.9 million. Planning for Food Pacific '88 is under way.

Following Food Pacific '86 there were a number of inquiries from the British Columbia food industry for the ministry to research market opportunities in the Pacific Rim. Hong Kong was targeted as a market with excellent potential because trade barriers are minimal and the country imports more than 75 percent of its food requirements. Dah Chong Hong, a major Hong Kong trading company, established a Vancouver-based sourcing office in early 1986. The company worked closely with the Export Market Development Branch to advise British Columbia companies on strategies for accessing the Hong Kong market. The Export Market Development Branch helped 12 B.C. firms participate in the first Canadian Solo Food Show in Hong Kong in March 1986. Dah Chong Hong staged Canadian food and beverage festivals throughout its retail food stores for two weeks prior to the show.

During trade missions to China, Hong Kong, Thailand, Malaysia and the Philippines the Export Market Development Branch assisted in licensing and joint venture arrangements, supported B.C. companies participating in international trade shows, and introduced a number of B.C. companies and their products, technology, equipment and expertise to the Pacific Rim marketplace. Staff hosted trade delegations from China, the Philippines, Japan, Australia, Mexico and Grenada.

The ministry published a B.C. Agriculture and Food Export Directory, which lists more than 200 B.C. companies with an interest in pursuing markets beyond provincial boundaries. The directory has been distributed widely throughout the world.

In February 1987, the ministry hosted a seminar, Accessing Export Market Support in B.C., which was attended by 120 representatives of the food processing industry.

The Marketing Branch encouraged operators of pavilions and concessions at Expo '86 to use B.C. products wherever possible. Thanks in part to these efforts, more than 65 percent of the food at Expo '86 originated in B.C., compared to approximately 30 percent in the food service sector. The B.C. Ferries Corporation has set a goal of 95 percent use of B.C. food aboard its ships, a figure which represents sales in excess of $25 million. The ministry assists the corporation with taste panels, purchasing decisions and B.C. supplier identification.

The ministry launched The Great Taste of B.C. promotional campaign in December 1986, aimed at increasing the use of B.C. products in the hotel, restaurant, and institution industry. More than 1,000 restaurants have registered. Restaurants are using door stickers, table tent cards, and a Great Taste of B.C. poster and recipe book in addition to featuring B.C. food products on their menu.

Several major seminars were sponsored during the year. A two-day presentation on food quality titled Food Frontiers — the Innovation Challenge was aimed at food industry executives and technologists. Two five-day seminars on sensory evaluation and analysis were conducted for 20 specialists from the food industry. This was the first time this seminar was held in Western Canada and response from the industry was very positive.

The ministry also published a B.C. Food and Beverage Processors' Directory, which lists companies processing food and beverage products in B.C.

Increasing market opportunities for production of specialty products such as oyster and shitake mushrooms, baby carrots, mini vegetables, kiwifruit and ginseng are attracting interest from B.C. producers.

More kiwifruit plantings are planned for 1987, despite an almost complete loss of Lower Mainland plantings due to record cold temperatures in the winter of 1985-86. Plantings on Vancouver Island survived with little or no damage. The ministry, in co-operation with Agriculture Canada under an ARDSA agreement, brought a specialist from New Zealand to work on cold hardiness. Two kiwifruit production and marketing seminars were held during the year. The first significant harvest and marketing of B.C.-produced kiwifruit is expected in 1987.

This is the second year of a two-year project in the Lytton area to determine cultural strategies for the production of American ginseng, which appears to have a promising future in British Columbia. The project focussed on micro-climate control, nutritional requirements and disease and insect problems. Results of the project will be made available to growers. A ginseng marketing and production seminar in the Thompson-Cariboo Region attracted 65 people. The first ginseng harvest occurred in the fall of 1986.

FINANCIAL ASSISTANCE/ INCENTIVES TO AGRICULTURE

The financial assistance programs of the ministry encourage growth and development of the agriculture and food sector in British Columbia and reduce selected risks to entrepreneurs.

Development incentives:

- direct incentives to encourage investment and the adoption of new technology in the farm and agri-food sector
- assistance to reduce the cost of specific inputs to farm production
- provision to encourage private sector financing of high risk, but potentially profitable farm and agri-business investment
- incentives to encourage the development of the agricultural infrastructure and industry support services

Financial Assistance programs are offered primarily through three branches: Agricultural Finance Branch, Agricultural and Rural Development (ARDA) Branch, and Farm Income and Crop Insurance Branch. The Aquaculture and Commercial Fisheries Branch and Farmland Resources Branch also report to the assistant deputy minister, Financial Assistance Programs. Total funds expended under major ministry financial assistance programs are summarized in Table Eight.

Table Eight

MAJOR FINANCIAL ASSISTANCE PROGRAM RESOURCES 1986-87

Program	Operating Expenses ($millions)	Premiums Grants Incentives ($millions)	Actual Includ. Accruals ($millions)
Administration	.135	–	.139
Farm Income Ins.	.546	31.4	17.012
Crop Ins. (Admin)	.956	**.*[1]	.936
Agricultural Fin.	.593	11.9[2]	11.017
Greenhouse Dev.	–	1.0[4]	.916
Food Ind. Dev.	–	0.55[4]	.482
ARDA (Admin)	.952	–	.767
ARDA (Projects)	–	8.5[3]	1.577
Total	**3.182**	**53.35**	**32.846**

NOTE:

1 Crop Insurance premiums are paid by the province and 100 percent of the amount is recovered to the vote from the federal government. No amount is shown for this transaction in the above table.

2 Includes $1.5 million for Federal/Provincial Drought Assistance Programs. Only the provincial share of 50 percent is shown.

3 ARDA Program project expenditures are paid by the province and 50 percent is recovered to the Consolidated Revenue Fund from the federal government.

4 Revised during year.

The *Guaranteed Loan Program* makes commercial credit available to B.C. farmers by guaranteeing farm loans which have higher risk than commercial lenders are prepared to take. In 1986, 10 guarantees were granted totalling $1,580,000. (Refer to Tables Nine and Ten).

In the March 1987 budget speech, the government announced termination of the *Partial Interest Reimbursement Program* effective at the end of the 1986 plan year. The program provided direct assistance to farmers to reduce the cost of agricultural loans by rebating a portion of the interest paid. During the year, 3,673 applicants received rebates averaging 11.5 percent of their 1985 interest costs, for a total program cost of $6.805 million. (Refer to Tables Eleven and Twelve)

The *ALDA Program* is designed to encourage agricultural land development for the production of primary agricultural products. Loans up to a maximum of $50,000 may be used to pay for primary land development work and secondary development for approved irrigation and drainage systems to land classified as farmland under the Assessment Act. Between January 1, 1986 and March 31, 1987 there were 203 contracts issued for a value of $2,445,625. In the same period, contracts were completed for total loans of $2,035,592. Loans for 1987 are estimated to be approximately $3.0 million, based on projected income to the ALDA Special Purpose Fund from existing loan repayments.

All available funds were not loaned during the year. Demand for credit, even at low interest rates, has fallen as B.C. farmers concentrate on improving their equity position in the face of declining land values and low profit margins. Also because of generous world grain supplies, the demand for new agricultural land in the Peace River has slackened, resulting in a large decrease in land clearing financed through the program. (Refer to Tables Thirteen through Sixteen)

The *Food Industry Development Program* was initiated in 1985 to encourage the British Columbia agriculture and food industry to expand sales and to stimulate growth and development of the British Columbia food processing sector. Grants are provided to food processors who undertake approved projects to develop new products, expand markets and introduce new food processing technology. Forty-four proposals were approved for assistance totalling approximately $839,000, and 15 more proposals were under consideration. Projects approved for assistance covered a wide range of activities including research for a new line of fish products based on Pacific dogfish; new market development for a line of quality pureed fruits and vegetables for the institutional market; a productivity improvement program to improve the operational efficiency of a cake mix manufacturing plant. An estimated 300 person-years of employment will result from implementation of the 44 approved projects. The applicants will invest $4.4 million in addition to that provided under the program.

The *Farm Product Industry Act Program* continued to offer loan guarantees and grants to specific agricultural or food processing enterprises encountering financial difficulty. (Refer to Table Seventeen) Assistance may relate to financing of working capital, refinancing of existing debt or the provision of additional security to banks on risky but potentially viable enterprises. Grants can also be provided to encourage improved productivity, modernization or expansion where other major ministry programs do not apply. At the end of the fiscal year, two loan guarantees and six grants had been approved. The assets of Creston Valley Foods were sold.

The *Agri-Food Regional Development Subsidiary Agreement* (ARDSA) is a five-year $40 million program jointly funded by the B.C. Ministry of Agriculture and Fisheries and Agriculture Canada under the terms of the Economic and Regional Development Agreement (ERDA). The objectives of ARDSA are to stimulate growth and development, increase employment, enhance the viability and competitiveness of the agricultural production and food processing industry and conserve and develop the basic agricultural resources of land and water. To date the ARDSA program has committed $8.2 million in contributions to 57 projects. These projects will generate an additional $12.8 million of private sector expenditure. (Refer to Table Eighteen)

Several major projects were approved to help producers make economic adjustments on the farm. A *Wine Rationalization Program* provided for the removal of red grape vines and replanting with white grape varieties in keeping with the demand of the industry and consumers. The *Beef Cattle Industry Feed Storage Program* assists producers in construction of winter feed storage facilities to minimize feed quality losses and improve cattle weight gains at a lower cost.

Risk Reduction:

- assistance to reduce the adverse impact of fluctuations in prices and input costs on selected commodities.

- assistance to reduce the impact of crop losses due to adverse weather and other uncontrollable risks.

The *Farm Income Insurance Program* provides an insurance scheme that reduces farm losses caused by detrimental price fluctuations due to low market returns and/or escalating input costs. Farm Income Insurance premiums are shared equally between the participant and the provincial government, and the ministry provides funding for administration. After deducting producer premium contributions, $15.3 million of net indemnities were distributed to participating producers, increasing farm income levels by that amount. (Refer to Tables Nineteen and Twenty and Figures Nine and Ten) Lower production volumes in tree fruits, processing strawberries and blueberries resulted in higher prices and no net indemnities payable. Production volume of potatoes was also down and prices were in excess of 30 percent over the previous year in some categories of potatoes. Payments have not yet been determined for 1986.

The *Crop Insurance Program* stabilizes farm income on an individual basis due to crop losses resulting from natural perils. Farmers and the federal government share the cost of premiums while the B.C. government handles all delivery and program administration costs. Claims were paid for losses in grain and vegetable sectors due to drought, and in forage, berries, grapes and tree fruits due to winter frost. Coverage totalled $89.9 million in 1986. Indemnities paid out were $15.7 million, exceeding premiums by $6.0 million. (Refer to Tables Twenty-one and Twenty-two and Figure Eleven)

Table Nine

AGRICULTURAL CREDIT ACT, GUARANTEED LOAN PROGRAM ACTIVE GUARANTEES, MARCH 31, 1987, BY REGION

	1974 - 1985 inclusive		1986		Total	
REGION	No.	$000	No.	$000	No.	$000
South Coastal	37	3,651	8	1,430	45	5,081
Thompson-Cariboo	1	86	1	125	2	211
Okanagan-Kootenay	2	291	1	25	3	316
Central	2	59	0	0	2	59
Peace River	1	104	0	0	1	104
TOTAL	**43**	**4,191**	**10**	**1,580**	**53**	**5,771**

Table Ten

AGRICULTURAL CREDIT ACT, GUARANTEED LOAN PROGRAM ACTIVE GUARANTEES, MARCH 31, 1987, BY ENTERPRISE

	1974 - 1985 inclusive		1986		Total	
ENTERPRISE	No.	$000	No	$000	No.	$000
Dairy	16	1,785	0	0	16	1,785
Beef	1	86	2	175	3	261
Grain & Forage	0	0	0	0	0	0
Poultry	2	241	0	0	2	241
Vegetables	2	226	0	0	2	226
Orchards & Vineyards	2	263	0	0	2	263
Mixed	1	18	0	0	1	18
Swine	8	399	1	90	9	489
Sundry	10	1,142	6	1,015	16	2,157
Fish	1	31	1	300	2	331
TOTAL	**43**	**4,191**	**10**	**1,580**	**53**	**5,771**

Table Eleven

AGRICULTURAL CREDIT ACT
PARTIAL INTEREST REIMBURSEMENT PROGRAM
DISTRIBUTION OF PAYMENTS BY REGION

REGION	1985* %	1974 - 1985 %
South Coastal	57.3	52.8
Okanagan-Kootenay	19.8	20.6
Peace River	8.9	9.8
Thompson-Cariboo	8.1	10.9
Central	5.9	5.9

* Payouts made in 1986 on 1985 program

Table Twelve

AGRICULTURAL CREDIT ACT
PARTIAL INTEREST REIMBURSEMENT PROGRAM
DISTRIBUTION OF PAYMENTS BY ENTERPRISE

ENTERPRISE	1985 %	$000	1974 - 1985 %	$000
Dairy	33.5	2,280	28.6	28,629
Beef	16.8	1,142	21.8	21,946
Poultry	11.0	749	11.2	11,231
Orchards & Vineyards	8.2	558	5.8	5,877
Sundry*	8.1	551	7.5	7,549
Berries	6.9	470	1.3	1,333
Grain & Forage	4.3	293	5.3	5,344
Swine	3.9	265	3.5	3,534
Mixed	3.8	259	11.2	11,294
Vegetables	3.3	225	3.5	3,484
Sheep	.2	13	.3	336
TOTAL	100.00	6,805	100.00	100,557

* The mink category, used in 1974-1982, has been incorporated into the sundry category.

Table Thirteen

WORK DONE UNDER ALDA BY MUNICIPALITY
JANUARY 1, 1986 TO MARCH 31, 1987

WORK DONE UNDER A.L.D.A. BY MUNICIPALITY
JANUARY 1, 1986 - MARCH 31, 1987

AREA	CLEARED ACRES	AMOUNT	BROKEN ACRES	AMOUNT	IRRIG	DRAINAGE	ORCHARD RENOV	OTHER	TOTAL
Abbotsford	20	28,800	-	-	98,657	100,116	-	113,934	341,507
Chilliwack	65	56,696	-	-	103,252	89,796	-	97,115	346,859
Courtenay	32	22,180	-	-	15,000	-	-	5,317	42,497
Cranbrook	114	27,974	140	16,600	-	-	-	-	44,574
Creston	-	-	-	-	43,000	300	-	11,102	54,102
Dawson Creek	1,026	80,050	720	24,483	-	4,369	-	4,240	109,073
Duncan	36	27,625	10	2,246	6,198	-	-	2,760	43,198
Fort St. John	223	20,417	375	24,975	-	-	-	5,890	51,282
Kamloops	12	10,800	30	6,000	65,120	-	-	8,250	90,170
Oliver	50	12,000	77	8,170	176,327	-	15,000	11,013	222,510
Prince George	180	70,637	95	15,000	-	-	-	-	85,637
Quesnel	96	21,490	66	5,940	21,537	-	-	14,225	63,192
Salmon Arm	58	27,710	15	3,750	12,155	40,603	-	22,528	106,746
Smithers	201	35,520	181	14,399	28,102	-	-	2,000	80,021
Surrey	-	-	-	-	-	-	-	-	-
Vanderhoof	131	18,307	101	6,720	16,607	-	-	1,333	42,967
Vernon	-	-	-	-	92,332	19,984	15,471	24,572	152,359
Williams Lake	113	37,910	200	21,800	91,358	-	-	8,190	159,258
TOTALS	2,357	498,116	2,010	150,083	769,645	255,168	30,471	332,469	2,035,952

Table Fourteen

WORK DONE UNDER ALDA BY AGRICULTURAL REGION JANUARY 1, 1986 TO MARCH 31, 1987

AREA	CLEARED ACRES	AMOUNT	BROKEN ACRES	AMOUNT	IRRIG	DRAINAGE	ORCHARD RENOV	OTHER	TOTAL
SOUTH COASTAL	153	135,301	10	2,246	223,107	194,281	-	219,126	774,061
THOMPSON CARIBOO	125	48,710	230	27,800	156,478	-	-	16,440	249,428
OKANAGAN KOOTENAY	222	67,684	232	28,520	323,813	60,587	30,471	69,215	580,290
CENTRAL/ PEACE RIVER	1,857	246,421	1,538	91,517	66,247	300	-	27,688	432,173
TOTALS	2,357	498,116	2,010	150,083	769,645	255,168	30,471	332,469	2,035,952

Table Fifteen

AGRICULTURAL LAND DEVELOPMENT PROGRAM

Summary & Comparison 1985/6 - 1986/7 (FISCAL YEAR)

	No.	1985/6	No.	1986/7
Total Applications Received	141	$2,058,829	185	$3,138,912
Total Contracts Issued	161	$1,622,982	203	$2,445,625
Total Expenditures		$1,013,296.85		$2,035,951.69
Total Contracts Outstanding		$31,723.67		$843,039.25
		$1,845,020.52		$2,878,990.94
TOTAL LOANS PAYMENTS RECEIVED		$3,293,612		$3,510,452.
		Amount		Amount
Total Accounts as at March 31	2540	$17,290,181	2487	$16,592,925
Total Number of Delinquent	297	$427,873	252	$404,385
Transferred to Taxes	27	$294,371	32	$390,401

AGRICULTURAL LAND DEVELOPMENT ASSISTANCE PROGRAM
DISTRICT COMMODITY SUMMARY

Applications January 1, 1986 to March 31, 1987
(Dollar amounts shown in thousands)

Districts	Dairy	Beef	Sheep	Grain Hay	Berries	Poult.	Vegs.	Orch. Vine-Yard	Mixed	Swine	Sundry (Green-houses)	Fish Farms
Abbotsford	266			19	78		64		151			
Chilliwack	346			10	15				104		9	
Courtenay							27		4			
Cranbrook												
Creston	15			49								
Dawson Creek		7		10					9			
Duncan	31			8	9	27	11	2	28			
Fort St. John		40		69					11			
Kamloops		98		26								
Oliver		89						306	44			
Prince George	8	62							6			
Quesnel		55		9					59			
Salmon Arm	61	49										
Smithers				21			5		125			
Surrey							20					
Vanderhoof	17	42							15			
Vernon	18	47		24	10			196				
Williams Lake		264		14					30			
TOTALS	$762	$753		$259	$112	$27	$127	$504	$586		$9	

ORCHARD RENOVATION PROGRAM

Total Applications Received	20
Total $ Amount	281,481

NOTE: The Column Orchard and Vineyard includes Regular A.L.D.A. plus the Orchard Renovation Program.

Table Seventeen

FARM PRODUCT INDUSTRY ACT
GUARANTEES AND LOANS OUTSTANDING

Guarantees	March 31, 1987	March 31, 1986
Victoria Farm Meats Services Ltd.	$150,000	-
McLean & Fitzpatrick Ltd.	1,000,000	-
Southern Interior Beef Corporation	280,000	$280,000
	$1,430,000	**$280,000**
Loans		
Hodgson Bee Supplies Ltd.	$26,000	$26,000
Ra-Bitco Farms Ltd.	110,000	110,000
	$136,000	**$136,000**
TOTAL	**$1,566,000**	**$416,000**

As of March 19, 1987, the Minister of Finance announced that no new initiatives will be funded under this program although all outstanding commitments will be honoured.

Table Eighteen

ARDSA PROGRAM ACTIVITY TO MARCH 31, 1987

	Applications Received	Rejected Withdrawn	Projects Approved	Shareable Costs
Program 1 Productivity Enhancement	124	79	18	$ 2,287,253
Program 2 Resource Development	122	38	27	$2,003,505
Program 3 Commodity Development	82	50	12	$3,943,071
Totals	**328**	**167**	**57**	**$8,233,829**

Table Nineteen

FARM INCOME INSURANCE PARTICIPANTS

Plan	Active Participants 1986	Active Participants 1985	Increase (+) Decrease (-) 1986
Beef	1,855	2,043	-188
Blueberries	130	124	+6
Greenhouse Vegetables	79	83	-4
Potatoes	82	87	-5
Processing Strawberries	189	192	-3
Processing Vegetables	35	36	-1
*Raspberries	0	294	-294
Sheep	86	99	-13
Swine	200	239	-39
Tree Fruit	1,605	1,696	-91
	4,261	4,893	-632

*repealed November 1985

Table Twenty

FARM INCOME INSURANCE DISBURSEMENTS

	1986/87	1985/86
Beef	$10,552,019	$8,777,861
Blueberry	(34,068)	(92,766)
Greenhouse Vegetables	584,187	587,270
Potatoes	299,255	(423,847)
Processing Strawberries	(77,855)	937,940
Processing Vegetables	5,541	68,384
*Raspberries	0	11,737
Sheep	207,740	(12,660)
Swine	(229,027)	2,637,100
Tree Fruit	4,010,247	6,351,214
Total	$15,318,039	$18,842,233

*repealed November 1985

Figure Nine

IMPACT OF FARM INCOME INSURANCE ON RETURNS AND COSTS COW-CALF PLAN

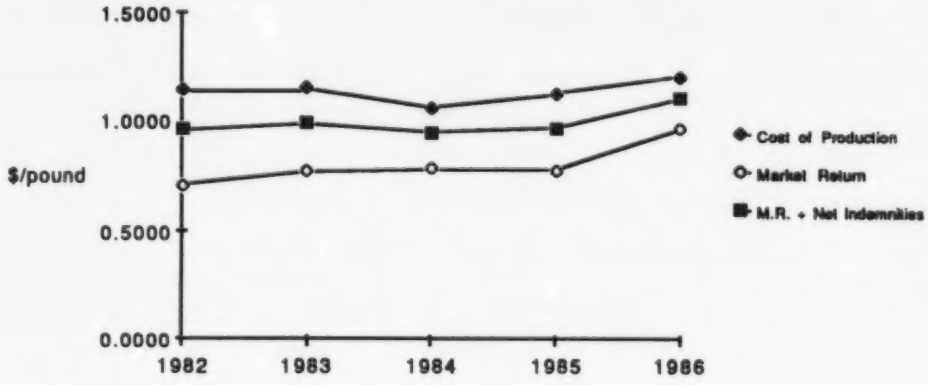


Figure Ten

IMPACT OF FARM INCOME INSURANCE ON RETURNS AND COSTS SWINE PLAN

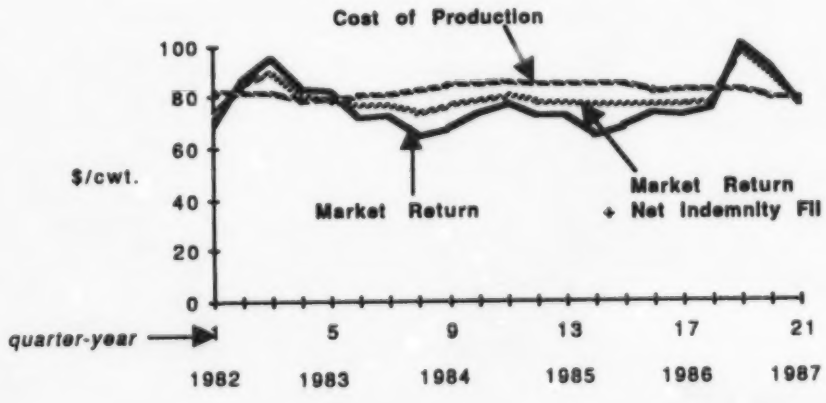


Table Twenty-one

CROP INSURANCE SUMMARY OF EXPERIENCE

Plan	Coverage	Premiums	Indemnity
Tree Fruit	$52,694,778	$4,483,504	$5,545,586
Grain	13,145,192	2,619,529	3,250,000
Vegetables	5,937,657	921,094	2,091,696
Berry	9,910,266	1,002,560	4,074,524
Grape	7,258,159	537,226	581,138
Forage	748,880	152,450	252,005
Totals	**$89,964,932**	**$9,716,363**	**$15,794,949**

Table Twenty-two

CROP INSURANCE SUMMARY OF CLAIMS

Plan	Contracts	Claimants	Claimants as % of Contracts	Major Perils
Tree Fruit	1,547	1,108	71	Fruit set failure/hail
Grain	658	354	54	Drought
Vegetables	114	82	71	Drought/excessive heat
Berry	217	187	76	Frost/wind
Grapes	134	74	55	Winter freeze
Forage	98	54	55	Drought/winter freeze
TOTAL	**2,768**	**1,859**	**67**	

Figure Eleven

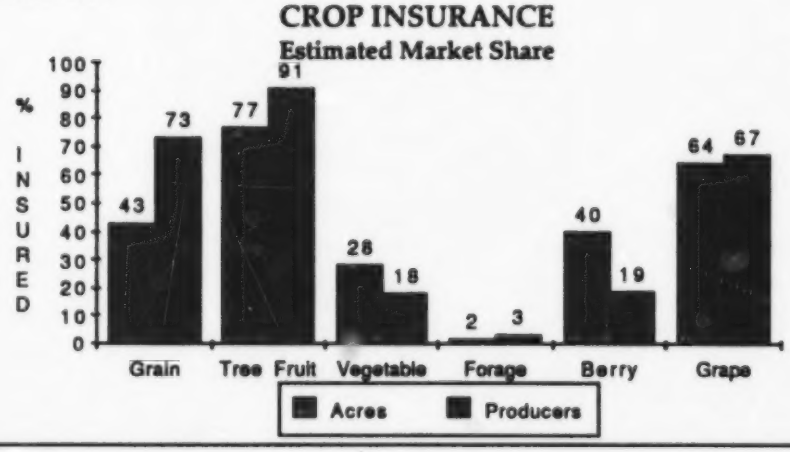


Table Twenty-Three

FEDERAL-PROVINCIAL DROUGHT ASSISTANCE PROGRAMS

	Total Number of Applicants	Total Dollar Amount
Livestock Drought Assistance Program	975	$4,356,876
Moderate Livestock Assistance Program	245	$553,590
Crop Drought Assistance Program	758	$7,218,900
Accounts Receivable for Ineligible producers under Crop Drought	7	$130,391

The above grants were joint-funded 50/50 cost share programs, implemented by Canada and the Province of British Columbia to provide contributions to eligible producers who experience severe and moderate drought conditions resulting in farm cash flow problems.

RESOURCE SUSTAINABILITY

Land and Water Resources

The *Farmland Resources Branch* reviews options and recommendations of resource management strategies that have an impact on B.C.'s agricultural soil and water resources.

In 1985 amendments to the Municipal Act were adopted which included a section pertaining to intensive agriculture. The legislation was reviewed to ensure intensive agricultural operations could function within a framework of agreed-upon guidelines. General consensus was achieved regarding the basic elements of a program, including standards for setbacks to barns and manure storage facilities, animal densities and a number of related issues.

During 1986 the branch continued to prepare information for Cabinet and the Cabinet Committee on Environment and Land Use to assist in the consideration of private appeals or local government applications regarding the Agricultural Land Reserve.

In September 1985 the B.C. Federation of Agriculture requested that the ministry examine and propose "right to farm" legislation to protect farmers from unwarranted civil lawsuits arising from normal farm practices. The branch examined the issue, reviewed legislation from other jurisdictions and prepared proposals for appropriate legislation. Farmers have requested protection from nuisance lawsuits brought by their rural non-farm neighbours as a result of farm noise or smells. The need for legislation continued to be reviewed at year-end.

A report by the Ministry of Environment and Parks reported that agricultural phosphorus loadings in the Okanagan Basin are significantly lower than previous estimates, reflecting a reasonable level of compliance with Ministry of Agriculture and Fisheries environmental guidelines for intensive agricultural operations. The ministry will continue its efforts to increase the awareness and compliance of livestock operations.

In response to increased interest in game farming, the ministry was involved in defining the economic benefits of this activity and examining how other jurisdictions administer game farming. Information

Table Twenty-four

FARMLAND RESOURCES BRANCH
PROPERTY MANAGEMENT PROGRAM

	1986-87	1985-86	1984-85
Rental Income	$413,773.80	$421,755.93	$387,552.91
Interest on Loans	80,592.64	96,374.64	90,278.26
Other Income	12,102.57	11,821.38	10,882.94
Total Income Rec'd	**$506,469.01**	**$529,981.95**	**$488,714.11**
No. of leases administered	127	136	136
Area of holdings	4,777 ha	5,266 ha	5,266 ha
Properties sold	3	4	0
Value	**$503,465.00**	**$1,396,000.00**	**0**

was prepared on potentials to create new economic opportunities in game farming for farmland owners.

The agricultural water requirements in the Nechako River Basin, including the future irrigation water requirements of agricultural operations in the region were examined and a report was prepared.

The branch administers a portfolio of 127 Provincial Agricultural Land Commission properties comprising more than 4,777 hectares of agricultural land for private farm development under policies of the commission. (Refer to Table Twenty-four) The security of the long-term leases, often with an option to purchase, promotes the efficient use of government-owned lands, encourages the growth of sound commercial farms and agricultural investment and demonstrates new approaches to agricultural production and development.

Water management is essential to crop production throughout British Columbia. Irrigation supply in the arid regions and drainage of excess water in the humid regions continue to be the most important factors affecting crop production. Improving land drainage in the Lower Mainland and areas of the interior and Peace River regions is a high priority for improved crop production, better field access, conversion to higher-yielding crops and reduction in soil erosion and degradation problems.

Many ministry programs are directed at promoting and developing proper design, installation and operation of drainage, irrigation and soil erosion control systems. The *Engineering Branch* has been actively involved in implementing regional water management projects involving more than 8,000 hectares under ARDSA. The potential expenditure of $2.0 million is expected to provide benefits to producers totalling more than $3.0 million.

A program for rehabilitation of irrigation storage dams, funded by ARDSA, is expected to result in 40 to 50 dam rehabilitation projects in the next three to four years. Engineering Branch staff initiated this program and continue to play a role in ensuring that projects are put forward and implemented.

An agricultural drainage handbook has been prepared and distributed. Ministry staff worked with the Irrigation Industry Association of British Columbia on a Trickle Irrigation Design Manual which was distributed to producers throughout the province.

A DATE project conducted near Osoyoos under the supervision of *Soils Branch* staff is demonstrating the suitability of secondary treated sewage effluent as a source of irrigation water for the commercial production of tree fruits, grapes and vegetables. Results indicate that effluent is suitable for irrigation. Its use in the project resulted in either increased yields or the same yields produced by well water.

There are about 600,000 hectares of agricultural land where excess water adversely affects farm income by lowering crop yields, reducing the growing season and increasing soil compaction. Elimination of excess water problems on the wetlands of the Fraser Valley would result in a 20 percent increase in farm receipts annually.

Soils Branch specialists continued the longterm Boundary Bay Water Control Project designed to determine and demonstrate the effects of drainage and subirrigation on crop growth and soil characteristics. The effect of drainage on survival and yield of winter wheat was determined in 1986. Without drainage, the crop was killed over the winter. With drainage, the grain yield was 8.2 tonnes per hectare and the straw yielded 11.5 tonnes per hectare.

Twenty-two seminars on all aspects of soil and water management were given to a total of 1,330 producers and extension personnel. A highlight was a two-day seminar on "micro irrigation" held in conjunction with the Irrigation Industry Association of B.C. The seminar provided the industry with extensive information on all aspects of trickle irrigation.

Approximately three percent of the land in B.C. has the combination of soil and climate suitable for arable agriculture, and only one percent is prime agricultural land. Since this small amount of land is in demand for other uses the provincial Agricultural Land Commission has the responsibility of preserving it for agriculture.

The Soils Branch Farmland Preservation program provides advice to the Land Commission on the capability of land for agriculture. On request from the commission, 10 on-site inspections were carried out under the Agricultural Land Commission and Soil Conservation acts. Staff processed 64 applications to the Land Commission from land owners in the Central Okanagan Regional District and the City of Kelowna. Staff provided technical advice on soils, agricultural

capability, land use and impact of the proposed activity on agriculture.

Ministry specialists conducted eight field evaluation trials to improve the ability to predict the fertility status of soils and to provide more precise guidance on fertilization practices. An improved soil test for alfalfa is being developed from these trials. Results from field trials are being used to develop lime recommendations for alfalfa production in the central interior. Liming will need to become a routine practice in the region to prevent a decline in alfalfa production.

In 1986-87 the Soils, Feed and Tissue Testing Laboratory in Kelowna analyzed 3,443 soils, 461 feed and 978 plant tissue samples in support of diagnostic and extension programs conducted by ministry field staff. In addition the laboratory analyzed 5,720 soil, feed and plant tissue samples from producers and provided recommendations on fertilizer practices. This compares to 13,000 samples in 1982, an indication that the goal of privatizing fee-for-service testing is being achieved as more and more producers are using private sector labs.

To assist the development of private sector laboratories a check sample service was provided to help labs monitor the accuracy of their procedures.

Rangeland

In 1986 the province's valuable range resource provided grazing from April through November for 209,000 cows and their calves. Range conditions continued to improve due to improved technology and management practices. In a rangeland trial conducted by the ministry to demonstrate the response of crested wheatgrass to nitrogen fertilization, results showed that a three-fold increase in forage production is readily possible. An investment of $15 in fertilizer per hectare produced additional forage worth $47 at current prices.

Much of British Columbia's 10 million hectares of rangeland is unproductive due to depletion of range grasses or poor water supply. The Rattlesnake Hill range development project near Cache Creek is being used to demonstrate methods of transforming a virtually unusable range area into a productive and valuable range for fall and spring grazing. Development over a number of years has included seeding of approximately 500 hectares, fertilization, fencing trials and water development.

A demonstration of photovoltaic technology for pumping livestock water was carried out as part of the project. Development of an economical alternative energy source to provide water to remote grazing areas would have a positive impact on range development in B.C. Detailed results on the photovoltaic project will be available after a year of operation.

The Rattlesnake Hill project is a co-operative effort of the Ministry of Agriculture and Fisheries, the Ministry of Forests and the range user. More than 400 ranchers, researchers, extension personnel and foreign visitors have visited the site. The results are already being used extensively by the ranching community.

More than 16,000 hectares of depleted grasslands have been seeded with the ministry's disc and rangeland seeder, equipment specially designed for work on rugged terrain. The additional forage produced on this acreage, providing much-needed spring and fall range for the beef cattle industry, is valued in excess of $1.0 million per year. In 1986 an agreement was negotiated with a contractor that will see the range seeding program managed and operated privately. A delegation from Qinghai Province in China came to B.C. to see the equipment and learn more about range management techniques.

CENTRAL SUPPORT SERVICES

A number of central support services and management administration provide an overall framework for program development and operations across the ministry. These are Policy Development and Economics, and Management Services.

Within Policy Development and Economics are branches or divisions that provide a programming framework for policy analysis and co-ordination, farm management extension, statistics and communications.

Management and administrative services include personnel, budgeting and financial control, and facilities.

During the 1986-87 year the *Policy Analysis and Co-ordination Branch* assisted the deputy and ministry in development of effective and consistent policies and programs to help ensure the sound development of the agriculture, fisheries and food sector.

Branch staff prepared a report titled The Economic Benefits of Food Pacific '86, which provided an assessment of the international food and beverage exhibition held in Vancouver in August. The study showed that the economic impact of Food Pacific was close to $123 million.

Staff worked with the executive of the ministry to organize and host the Canadian Agriculture Ministers' Conference in August 1986. B.C. was a strong supporter of a national agricultural strategy which was agreed to by all ministers in December 1986. The strategy outlined goals and objectives that provide the basis for federal-provincial co-operation and co-ordination in providing programs to farmers.

During 1986, the Policy Analysis and Co-ordination staff worked with other ministry staff and the industry in developing specific industry/commodity strategies which identified a planning process within which the commodity could develop. The staff also provided facilitator skills to commodity planning meetings involving ministry and industry personnel.

The development of a provincial agricultural development strategy was also begun as part of this exercise.

Staff worked with the Marketing Branch to prepare background information on trade issues affecting British Columbia farmers and food processors for use by the Ministry of Economic Development in U.S./Canada bilateral trade negotiations.

British Columbia feed users were given assistance in their submissions to the federal government, which led to the successful exclusion of British Columbia from the Ontario corn producers' request for a tariff on U.S. corn imports to Canada.

Interest by British Columbia entrepreneurs in game farming has led to a need for development of a game farming policy. The branch has been working with the Ministry of Environment to develop an understanding of this issue, both from the perspective of the potential economic benefits and the need to ensure adequate conservation and protection to native wildlife species.

The *Farm Management Extension Branch* provides leadership in development of a total management approach to provincial extension activities. The program provided training to ministry staff in farm management principles and computer decision-making. In addition numerous publications were produced for use by farm clients, agri-business, farm commodity groups, policy developers, extension staff and senior managers.

A major business management conference was held in Richmond in January 1986. The conference brought together 240 leading commercial farmers, representatives of agribusiness, farm advisors, consultants and others interested in the farm business management field.

Computer decision models were developed for a number of commodities including sea pen salmon production. Seven new Farm Business Management Factsheets were published as well as 11 Planning Notes detailing costs and returns information and investment opportunities for specific commodities. Four major publications were released: Taxation and the B.C. Farmer, Estate Planning for B.C. Farmers, Sources of Farm Credit and Financing and Incentives for Aquaculture Production in B.C.

The *Statistics and Quantitative Analysis Unit* provides database development, database management and data dissemination services to users in government and in the farming, professional, academic and business communities. The unit continued its support to federal and provincial data

collectors, especially Statistics Canada, in various surveys and on the mid-year and annual agricultural outlook.

A number of integrated statistics of the agriculture, fisheries and food industry were developed and formatted in flowcharts for policy uses. Unit staff also directed a study of supply and demand balance in the agrifood sector on Vancouver Island and responded to more than 600 requests for data, the majority from within government.

The *Information Services Branch* prepares printed and audio-visual materials to assist ministry field specialists in extension of the latest production, marketing and management technology to producers, processors and agri-business. The branch also works to create a broader awareness and understanding of the agriculture and food system by the public.

In support of ministry programs, the branch co-ordinated the printing of all ministry publications through the Queen's Printer. Initiatives were taken to investigate the possibility of selling publications. A Gardener's Guide to Pest Prevention and Control was sold through the Queen's Printer Bookstore. At year-end more than 5,500 copies had been sold. Private publishers were involved with several other publications, including conference proceedings and the B.C. Food and Beverage Processors' Directory. Audio-visual productions included a four-program series on commercial swine production to accompany the ministry's swine home study course, and a program on B.C.'s dairy industry aimed primarily at trade delegations and foreign visitors. A video-tape was prepared to encourage participation in Food Pacific '88.

Public information materials included a full-color information kit describing British Columbia's agricultural regions, commodities, markets and technology. Several presentations were made to industry groups by the minister and other senior members of the executive to inform the general public and farm groups about ministry programs.

Display and other promotional materials were prepared for Expo '86 and Food Pacific '86. The branch also prepared feature articles and news releases to inform the media and public about ministry export markets. Audio-visual materials were prepared to help promote the British Columbia agriculture industry in overseas markets.

The *Rural Organizations and Services Branch* stimulates rural development by providing services and support to six organizations: 4-H, Young Farmers, Farmers Institutes and the Farmers Institute Advisory Board, Women's Institutes, Rural Women's Organization, International Agricultural Exchange Association and the Federal-Provincial Agricultural Employment Committee.

Strong leadership is essential to the continuing development of the agricultural sector and rural communities. The 4-H program has provided rural youth and adults with agricultural and personal growth programs for more than 70 years. Forty-eight 15-year-olds from throughout B.C. took part in an International Year of the Youth conference in Naramata. Seventeen B.C. 4-H members and two leaders travelled to Japan for a one-month stay. More than 40 senior 4-H members took part in a variety of national and international travel and exchange programs.

The branch acts as the co-ordinating office for the International Agricultural Exchange Association. In 1986 British Columbia hosted 25 IAEA participants from New Zealand, Australia and Europe, while 16 young British Columbians travelled to other countries.

The Rural Organizations and Services Branch co-ordinates funding assistance under the B.C. Agricultural Aid to Developing Countries program. B.C. government assistance totalling $200,000 was granted to 28 non-government organizations to carry out Third World development projects. Projects included the construction of a food storage facility in Sierra Leone and a garden irrigation project in Niger. A $30,000 contribution was made to the Canadian Red Cross relief operation in the Sudan.

The branch also administers the ministry's grants to fairs and societies. Fifty-eight agricultural fairs and exhibitions received operating grants totalling $186,000 in 1986. Societies receiving grants included the SPCA, the B.C. Women's Institute, Canadian Western Agribition and the Veterinary Infectious Disease Organization.

The branch also co-ordinates the Demonstration of Agricultural Technology and Economics program (DATE). DATE provides funding for ministry-generated research and demonstration projects. There were 46 ongoing or new DATE programs in 1986 administered by ministry staff throughout the province.

MINISTRY ORGANIZATION AND STRUCTURE

MINISTRY EXPENDITURES

Ministry expenditures for the 1986-87 fiscal year were $70.8 million. (Approximate breakdown by administrative unit is shown in Table One and Figure One) The financial statements in this report have been prepared by management in accordance with accounting policies adopted by the Province of British Columbia. Management is responsible for the accuracy, integrity and objectivity of the information in these statements. Management maintains extensive internal accounting controls to ensure that transactions are completely and accurately recorded on a timely basis, are properly approved and result in reliable financial statements.

These statements are incorporated in the combined financial statements of the province, which are examined by the auditor general. The auditor general expresses an opinion as to whether the combined financial statements present fairly the financial position, operating results and changes in financial position of the Government of British Columbia in conformity with the stated accounting policies. This opinion is contained in the Auditor's Report which is included in the Public Accounts presented to the Legislative Assembly.

MINISTRY STAFFING

In 1986 ministry staffing remained at 498 full-time equivalents (FTEs) – approximately 337 members of the B.C. Government Employees' Union, 111 members of the Professional Employees' Association and 60 staff excluded from union membership, including managers.

Approximately 70 percent of ministry staff were involved in delivery of programs in the field (extension-oriented) and about 12 percent in delivery of financial assistance programs. Remaining staff were involved in administration and support services.

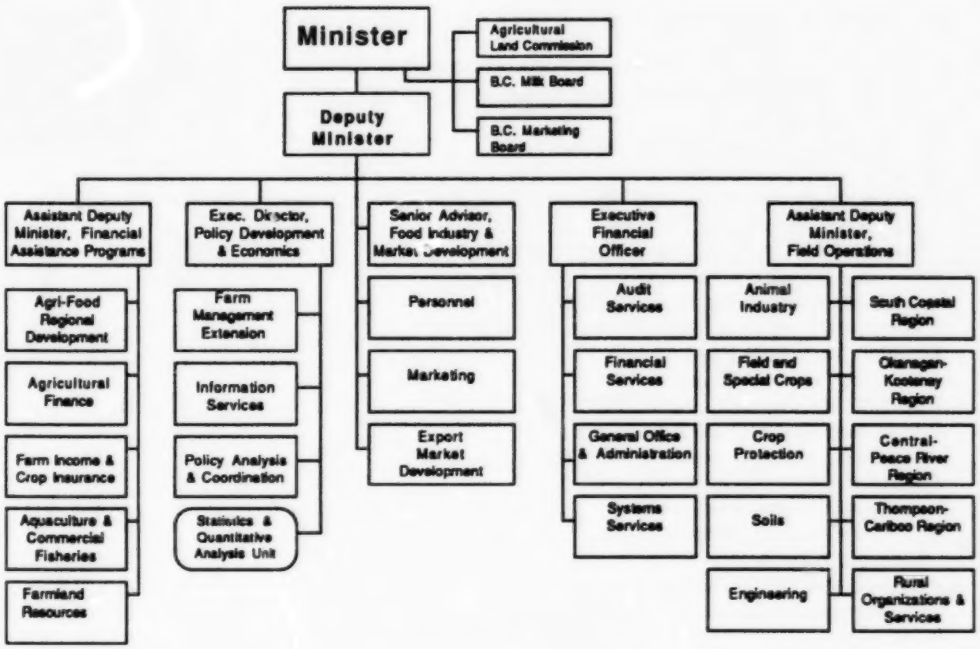
During the year, the ministry classification committee reviewed some 65 positions which resulted in 33 reclassifications. As well, a review of more than 50 agriculture officers was initiated. A further review of 10 organizational structures within the ministry was completed.

ORGANIZATIONAL CHANGES IN 1986-87

In 1986-87 there were a number of changes in ministry organization. An Animal Industry Branch was formed to include the former Livestock Branch as well as veterinary, dairy and poultry programming. A Policy, Analysis and Co-ordination Branch was formed under the executive director of Policy, Development and Economics. An Aquaculture and Commercial Fisheries Branch was created in August 1986 by combining the programs and resources of the former Marine Resources Section of the Ministry of Environment and Parks with the former aquaculture program of the Ministry of Agriculture and Fisheries.

Figure Twelve

B.C. MINISTRY OF AGRICULTURE AND FISHERIES
ORGANIZATIONAL CHART - 1986



BRITISH COLUMBIA
MINISTRY OF AGRICULTURE AND FISHERIES OFFICES

Abbotsford: 205-33780 Laurel Street V2S 1X4	852-5211
Farmland Resources	852-5205
Engineering Branch, 33832 South Fraser Way V2S 2C5	852-5363
Agriculture & Food Centre, 32916 Marshall Rd. V2S 1K2	852-5350
Chief Veterinarian	852-5370
Veterinary Laboratory, Box 100 V2S 4N8	853-1161
Burnaby: Agricultural Land Commission, 4940 Canada Way V5G 4K6	660-7000
Burnaby: Dairy Laboratory, 3705 Willingdon Ave. V5G 3H3	660-5499
Chilliwack: 5-8635 Young Road South V2P 4P3	795-8395
Cloverdale: 17720-57th Avenue, Surrey V3S 4P9	576-2911
Courtenay: 209-420 Cumberland Road V9N 5M6	334-1239
Cranbrook: 42-8th Avenue South V1C 2K3	426-1535
Creston: 456 Northwest Boulevard, Box 1980 V0B 1G0	428-3255
Dawson Creek: 1201-103rd Avenue V1G 4J2	784-2200
Crop Insurance Branch	784-2200
Duncan: 238 Government Street V9L 1A5	746-1210
Fort St. John: 201-9711 100th Avenue V1J 1Y2	787-3240
Crop Insurance Branch, 221-9711 100th Ave. V1J 1Y2	787-3240
Kamloops: 162 Oriole Road V2C 4N7	828-4552
Kelowna: 1873 Spall Road V1Y 4R2	861-7211
Crop Insurance Branch	861-7211
Oliver: Court House, Box 940 V0H 1T0	498-2420
Penticton: 3547 Skaha Lake Road	492-1320
Crop Insurance Branch 101-100 Main St.	492-1315
Prince George: Experimental Farm Site, R.R.#8, RMD 7 V2N 4M6	565-6466
Quesnel: 208-350 Barlow Avenue V2J 2C1	992-4245
Salmon Arm: Samara Building, Box 639 V0E 2T0	832-1630
Sidney: Bldg. 20, Saanichton Research Station 8801 E. Saanich Rd. V8L 1H3	656-0941
Smithers: Government Building, Bag 5000 V0J 2N0	847-7246
Vancouver: Milk Board 800 South Cassiar St. V5K 4N6	660-7660
Vanderhoof: Church Avenue, Box 987 V0J 4K7	567-2111
Vernon: 4607 - 23rd Street V1T 4K7	549-5580
Victoria: Minister's Office, Parliament Buildings V8V 1X4	387-1978
Head Office, 808 Douglas Street V8W 2Z7	387-5121
Williams Lake: 540 Borland Street V2G 1R8	398-4500